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THE WORST JOURNEY IN THE WORLD

ANTARCTIC
1910–1913

APSLEY
CHERRY-GARRARD

Vol. II.

THE WORST JOURNEY IN THE WORLD

ANTARCTIC

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E. A. Wilson, del.

A HALO ROUND THE MOON

THE WORST JOURNEY IN THE WORLD

ANTARCTIC

1910–1913

BY

APSLEY CHERRY-GARRARD

WITH PANORAMAS, MAPS, AND ILLUSTRATIONS BY THE LATE
DOCTOR EDWARD A. WILSON AND OTHER MEMBERS OF THE EXPEDITION

IN TWO VOLUMES

VOLUME TWO

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CHAPTER VIII

SPRING

Inside was pandemonium. Most men had gone to bed, and I have a blurred memory of men in pyjamas and dressing-gowns getting hold of me and trying to get the chunks of armour which were my clothes to leave my body. Finally they cut them off and threw them into an angular heap at the foot of my bunk. Next morning they were a sodden mass weighing 24 lbs. Bread and jam, and cocoa; showers of questions; "You know this is the hardest journey ever made," from Scott; a broken record of George Robey on the gramophone which started us laughing until in our weak state we found it difficult to stop. I have no doubt that I had not stood the journey as well as Wilson: my jaw had dropped when I came in, so they tell me. Then into my warm blanket bag, and I managed to keep awake just long enough to think that Paradise must feel something like this.

We slept ten thousand thousand years, were wakened to find everybody at breakfast, and passed a wonderful day, lazying about, half asleep and wholly happy, listening to the news and answering questions. "We are looked upon as beings who have come from another world. This afternoon I had a shave after soaking my face in a hot sponge, and then a bath. Lashly had already cut my hair. Bill looks very thin and we are all very blear-eyed from want of sleep. I have not much appetite, my mouth is very dry and throat sore with a troublesome hacking cough which I have had all the journey. My taste is gone. We are

getting badly spoiled, but our beds are the height of all our pleasures."[1]

But this did not last long:

"Another very happy day doing nothing. After falling asleep two or three times I went to bed, read Kim, and slept. About two hours after each meal we all want another, and after a tremendous supper last night we had another meal before turning in. I have my taste back but all our fingers are impossible, they might be so many pieces of lead except for the pins and needles feeling in them which we have also got in our feet. My toes are very bulbous and some toe-nails are coming off. My left heel is one big burst blister. Going straight out of a warm bed into a strong wind outside nearly bowled me over. I felt quite faint, and pulled myself together thinking it was all nerves: but it began to come on again and I had to make for the hut as quickly as possible. Birdie is now full of schemes for doing the trip again next year. Bill says it is too great a risk in the darkness, and he will not consider it, though he thinks that to go in August might be possible."[2]

And again a day or two later:

"I came in covered with a red rash which is rather ticklish. My ankles and knees are a bit puffy, but my feet are not so painful as Bill's and Birdie's. Hands itch a bit. We must be very weak and worn out, though I think Birdie is the strongest of us. He seems to be picking up very quickly. Bill is still very worn and rather haggard. The kindness of everybody would spoil an angel."[3]

I have put these personal experiences down from my diary because they are the only contemporary record I possess. Scott's own diary at this time contains the statement: "The Crozier party returned last night after enduring for five weeks the hardest conditions on record. They looked more weather-worn than any one I have yet seen. Their faces were scarred and wrinkled, their eyes dull, their hands whitened and creased with the constant exposure to damp and cold, yet the scars of frost-bite were

[1] My own diary. [2] *Ibid.* [3] *Ibid.*

very few . . . to-day after a night's rest our travellers are very different in appearance and mental capacity." [1]

"Atch has been lost in a blizzard," was the news which we got as soon as we could grasp anything. Since then he has spent a year of war in the North Sea, seen the Dardanelles campaign, and much fighting in France, and has been blown up in a monitor. I doubt whether he does not reckon that night the worst of the lot. He ought to have been blown into hundreds of little bits, but always like some hardy indiarubber ball he turns up again, a little dented, but with the same tough elasticity which refuses to be hurt. And with the same quiet voice he volunteers for the next, and tells you how splendid everybody was except himself.

It was the blizzard of July 4, when we were lying in the windless bight on our way to Cape Crozier, and we knew it must be blowing all round us. At any rate it was blowing at Cape Evans, though it eased up in the afternoon, and Atkinson and Taylor went up the Ramp to read the thermometers there. They returned without great difficulty, and some discussion seems to have arisen as to whether it was possible to read the two screens on the sea-ice. Atkinson said he would go and read that in North Bay: Gran said he was going to South Bay. They started independently at 5.30 P.M. Gran returned an hour and a quarter afterwards. He had gone about two hundred yards.

Atkinson had not gone much farther when he decided that he had better give it up, so he turned and faced the wind, steering by keeping it on his cheek. We discovered afterwards that the wind does not blow quite in the same direction at the end of the Cape as it does just where the hut lies. Perhaps it was this, perhaps his left leg carried him a little farther than his right, perhaps it was that the numbing effect of a blizzard on a man's brain was already having its effect, certainly Atkinson does not know himself, but instead of striking the Cape which ran across his true front, he found himself by an old fish trap which

[1] *Scott's Last Expedition*, vol. i. p. 361.

he knew was 200 yards out on the sea-ice. He made a great effort to steady himself and make for the Cape, but any one who has stood in a blizzard will understand how difficult that is. The snow was a blanket raging all round him, and it was quite dark. He walked on, and found nothing.

Everything else is vague. Hour after hour he staggered about: he got his hand badly frost-bitten: he found pressure: he fell over it: he was crawling in it, on his hands and knees. Stumbling, tumbling, tripping, buffeted by the endless lash of the wind, sprawling through miles of punishing snow, he still seems to have kept his brain working. He found an island, thought it was Inaccessible, spent ages in coasting along it, lost it, found more pressure, and crawled along it. He found another island, and the same horrible, almost senseless, search went on. Under the lee of some rocks he waited for a time. His clothing was thin though he had his wind-clothes, and, a horrible thought if this was to go on, he had boots on his feet instead of warm finnesko. Here also he kicked out a hole in a drift where he might have more chance if he were forced to lie down. For sleep is the end of men who get lost in blizzards. Though he did not know it he must now have been out more than four hours.

There was little chance for him if the blizzard continued, but hope revived when the moon showed in a partial lull. It is wonderful that he was sufficiently active to grasp the significance of this, and groping back in his brain he found he could remember the bearing of the moon from Cape Evans when he went to bed the night before. The hut must be somewhere over there: this must be Inaccessible Island! He left the island and made in that direction, but the blizzard came down again with added force and the moon was blotted out. He tried to return to the island and failed: then he stumbled on another island, perhaps the same one, and waited. Again the lull came, and again he set off, and walked and walked, until he recognized Inaccessible Island on his left. Clearly he must have been under Great Razorback Island and this is some

four miles from Cape Evans. The moon still showed, and on he walked and then at last he saw a flame.

Atkinson's continued absence was not noticed at the hut until dinner was nearly over at 7.15; that is, until he had been absent about two hours. The wind at Cape Evans had dropped though it was thick all round, and no great anxiety was felt: some went out and shouted, others went north with a lantern, and Day arranged to light a paraffin flare on Wind Vane Hill. Atkinson never experienced this lull, and having seen the way blizzards will sweep down the Strait though the coastline is comparatively clear and calm, I can understand how he was in the thick of it all the time. I feel convinced that most of these blizzards are local affairs. The party which had gone north returned at 9.30 without news, and Scott became seriously alarmed. Between 9.30 and 10 six search parties started out. But time was passing and Atkinson had been away more than six hours.

The light which Atkinson had seen was a flare of tow soaked in petrol lit by Day at Cape Evans. He corrected his course and before long was under the rock upon which Day could be seen working like some lanky devil in one of Dante's hells. Atkinson shouted again and again but could not attract his attention, and finally walked almost into the hut before he was found by two men searching the Cape. "It was all my own damned fault," he said, "but Scott never slanged me at all." I really think we should all have been as merciful! Wouldn't *you*?

And that was that: but he had a beastly hand.

Theoretically the sun returned to us on August 23. Practically there was nothing to be seen except blinding drift. But we saw his upper limb two days later. In Scott's words the daylight came "rushing" at us. Two spring journeys were contemplated; and with preparations for the Polar Journey, and the ordinary routine work of the station, everybody had as much on his hands as he could get through.

Lieutenant Evans, Gran and Forde volunteered to go out to Corner Camp and dig out this depôt as well as that

of Safety Camp. They started on September 9 and camped on the sea-ice beyond Cape Armitage that night, the minimum temperature being −45°. They dug out Safety Camp next morning, and marched on towards Corner Camp. The minimum that night was −62.3°. The next evening they made their night camp as a blizzard was coming up, the temperature at the same time being −34.5° and minimum for the night −40°. This is an extremely low temperature for a blizzard. They made a start in a very cold wind the next afternoon (September 12) and camped at 8.30 P.M. That night was bitterly cold and they found that the minimum showed −73.3° for that night. Evans reports adversely on the use of the eider-down bag and inner tent, but here none of our Winter Journey men would agree with him.[1] Most of September 13th was spent in digging out Corner Camp which they left at 5 P.M., intending to travel back to Hut Point without stopping except for meals. They marched all through that night with two halts for meals and arrived at Hut Point at 3 P.M. on September 14, having covered a distance of 34.6 statute miles. They reached Cape Evans the following day after an absence of $6\frac{1}{2}$ days.[2]

During this journey Forde got his hand badly frost-bitten which necessitated his return in the Terra Nova in March 1912. He owed a good deal to the skilful treatment Atkinson gave it.

Wilson was still looking grey and drawn some days, and I was not too fit, but Bowers was indefatigable. Soon after we got in from Cape Crozier he heard that Scott was going over to the Western Mountains: somehow or other he persuaded Scott to take him, and they started with Seaman Evans and Simpson on September 15 on what Scott calls "a remarkably pleasant and instructive little spring journey," [3] and what Bowers called a jolly picnic.

This picnic started from the hut in a −40° temperature, dragging 180 lbs. per man, mainly composed of stores for the geological party of the summer. They pene-

[1] *Scott's Last Expedition*, vol. ii. p. 293.
[2] *Ibid.* pp. 291-297; written by Lieutenant Evans.
[3] *Ibid.* vol. i. p. 409.

trated as far north as Dunlop Island and turned back from there on September 24, reaching Cape Evans on September 29, marching twenty-one miles (statute) into a blizzard wind with occasional storms of drift and a temperature of – 16°: and they marched a little too long; for a storm of drift came against them and they had to camp. It is never very easy pitching a tent on sea-ice because there is not very much snow on the ice: on this occasion it was only after they had detached the inner tent, which was fastened to the bamboos, that they could hold the bamboos, and then it was only inch by inch that they got the outer cover on. At 9 P.M. the drift took off though the wind was as strong as ever, and they decided to make for Cape Evans. They arrived at 1.15 A.M. after one of the most strenuous days which Scott could remember: and that meant a good deal. Simpson's face was a sight! During his absence Griffith Taylor became meteorologist-in-chief. He was a greedy scientist, and he also wielded a fluent pen. Consequently his output during the year and a half which he spent with us was large, and ranged from the results of the two excellent scientific journeys which he led in the Western Mountains, to this work during the latter half of September. He was a most valued contributor to The South Polar Times, and his prose and poetry both had a bite which was never equalled by any other of our amateur journalists. When his pen was still, his tongue wagged, and the arguments he led were legion. The hut was a merrier place for his presence. When the weather was good he might be seen striding over the rocks with a complete disregard of the effect on his clothes: he wore through a pair of boots quicker than anybody I have ever known, and his socks had to be mended with string. Ice movement and erosion were also of interest to him, and almost every day he spent some time in studying the slopes and huge ice-cliffs of the Barne Glacier, and other points of interest. With equal ferocity he would throw himself into his curtained bunk because he was bored, or emerge from it to take part in some argument which was troubling the table. His diary must have been almost as long as the

reports he wrote for Scott of his geological explorations. He was a demon note-taker, and he had a passion for being equipped so that he could cope with any observation which might turn up. Thus Old Griff on a sledge journey might have notebooks protruding from every pocket, and hung about his person, a sundial, a prismatic compass, a sheath knife, a pair of binoculars, a geological hammer, chronometer, pedometer, camera, aneroid and other items of surveying gear, as well as his goggles and mitts. And in his hand might be an ice-axe which he used as he went along to the possible advancement of science, but the certain disorganization of his companions.

His gaunt, untamed appearance was atoned for by a halo of good-fellowship which hovered about his head. I am sure he must have been an untidy person to have in your tent: I feel equally sure that his tent-mates would have been sorry to lose him. His gear took up more room than was strictly his share, and his mind also filled up a considerable amount of space. He always bulked large, and when he returned to the Australian Government, which had lent him for the first two sledging seasons, he left a noticeable gap in our company.

From the time we returned from Cape Crozier until now Scott had been full of buck. Our return had taken a weight off his mind: the return of the daylight was stimulating to everybody: and to a man of his impatient and impetuous temperament the end of the long period of waiting was a relief. Also everything was going well. On September 10 he writes with a sigh of relief that the detailed plans for the Southern Journey are finished at last. "Every figure has been checked by Bowèrs, who has been an enormous help to me. If the motors are successful, we shall have no difficulty in getting to the Glacier, and if they fail, we shall still get there with any ordinary degree of good fortune. To work three units of four men from that point onwards requires no small provision, but with the proper provision it should take a good deal to stop the attainment of our object. I have tried to take every reasonable possibility of misfortune into consideration, and to so organize

the parties as to be prepared to meet them. I fear to be too sanguine, yet taking everything into consideration I feel that our chances ought to be good." [1]

And again he writes: "Of hopeful signs for the future none are more remarkable than the health and spirit of our people. It would be impossible to imagine a more vigorous community, and there does not seem to be a single weak spot in the twelve good men and true who are chosen for the Southern advance. All are now experienced sledge travellers, knit together with a bond of friendship that has never been equalled under such circumstances. Thanks to these people, and more especially to Bowers and Petty Officer Evans, there is not a single detail of our equipment which is not arranged with the utmost care and in accordance with the tests of experience." [2]

Indeed Bowers had been of the very greatest use to Scott in the working out of these plans. Not only had he all the details of stores at his finger-tips, but he had studied polar clothing and polar food, was full of plans and alternative plans, and, best of all, refused to be beaten by any problem which presented itself. The actual distribution of weights between dogs, motors and ponies, and between the different ponies, was largely left in his hands. We had only to lead our ponies out on the day of the start and we were sure to find our sledges ready, each with the right load and weight. To the leader of an expedition such a man was worth his weight in gold.

But now Scott became worried and unhappy. We were running things on a fine margin of transport, and during the month before we were due to start mishap followed mishap in the most disgusting way. Three men were more or less incapacitated: Forde with his frozen hand, Clissold who concussed himself by a fall from a berg, and Debenham who hurt his knee seriously when playing football. One of the ponies, Jehu, was such a crock that at one time it was decided not to take him out at all: and very bad opinions were also held of Chinaman. Another dog died of a mysterious disease. "It is trying," writes Scott, "but

[1] *Scott's Last Expedition*, vol. i. p. 403. [2] *Ibid.* p. 404.

I am past despondency. Things must take their course."[1] And "if this waiting were to continue it looks as though we should become a regular party of 'crocks.'"[2]

Then on the top of all this came a bad accident to one of the motor axles on the eve of departure. "To-night the motors were to be taken on to the floe. The drifts made the road very uneven, and the first and best motor overrode its chain; the chain was replaced and the machine proceeded, but just short of the floe was thrust to a steep inclination by a ridge, and the chain again overrode the sprockets; this time by ill fortune Day slipped at the critical moment and without intention jammed the throttle full on. The engine brought up, but there was an ominous trickle of oil under the back axle, and investigation showed that the axle casing (aluminium) had split. The casing had been stripped and brought into the hut: we may be able to do something to it, but time presses. It all goes to show that we want more experience and workshops. I am secretly convinced that we shall not get much help from the motors, yet nothing has ever happened to them that was unavoidable. A little more care and foresight would make them splendid allies. The trouble is that if they fail, no one will ever believe this."[3]

In the meantime Meares and Dimitri ran out to Corner Camp from Hut Point twice with the two dog-teams. The first time they journeyed out and back in two days and a night, returning on October 15; and another very similar run was made before the end of the month.

The motor party was to start first, but was delayed until October 24. They were to wait for us in latitude 80° 30′, man-hauling certain loads on if the motors broke down. The two engineers were Day and Lashly, and their two helpers, who steered by pulling on a rope in front, were Lieutenant Evans and Hooper. Scott was "immensely eager that these tractors should succeed, even though they may not be of great help to our Southern advance. A small measure of success will be enough to show their possibilities, their ability to revolutionize polar transport."[4]

[1] *Scott's Last Expedition*, vol. i. p. 425. [2] *Ibid.* p. 437. [3] *Ibid.* p. 429. [4] *Ibid.* p. 438.

Lashly, as the reader may know by now, was a chief stoker in the Navy, and accompanied Scott on his Plateau Journey in the Discovery days. The following account of the motors' chequered career is from his diary, and for permission to include here both it and the story of the adventures of the Second Return Party, an extraordinarily vivid and simple narrative, I cannot be too grateful.

After the motors had been two days on the sea-ice on their way to Hut Point Lashly writes on 26th October 1911:

"Kicked off at 9.30; engine going well, surface much better, dropped one can of petrol each and lubricating oil, lunched about two miles from Hut Point. Captain Scott and supporting party came from Cape Evans to help us over blue ice, but they were not required. Got away again after lunch but was delayed by the other sledge not being able to get along, it is beginning to dawn on me the sledges are not powerful enough for the work as it is one continual drag over this sea-ice, perhaps it will improve on the barrier, it seems we are going to be troubled with engine overheating; after we have run about three-quarters to a mile it is necessary to stop at least half an hour to cool the engine down, then we have to close up for a few minutes to allow the carbrutta to warm up or we can't get the petrol to vaporize; we are getting new experiences every day. We arrived at Hut Point and proceeded to Cape Armitage it having come on to snow pretty thickly, so we pitched our tent and waited for the other car to come up, she has been delayed all the afternoon and not made much headway. At 6.30 Mr. Bowers and Mr. Garrard came out to us and told us to come back to Hut Point for the night, where we all enjoyed ourselves with a good hoosh and a nice night with all hands.

"*27th October* 1911.

"This morning being fine made our way out to the cars and got them going after a bit of trouble, the temperature being a bit low. I got away in good style, the surface seems to be improving, it is better for running on but very rough and the overheating is not overcome nor likely to be as far

as I can see. Just before arriving at the Barrier my car began to develop some strange knocking in the engine, but with the help of the party with us I managed to get on the Barrier, the other car got up the slope in fine style and waited for me to come up; as my engine is giving trouble we decided to camp, have lunch and see what is the matter. On opening the crank chamber we found the crank brasses broke into little pieces, so there is nothing left to do but replace them with the spare ones; of course this meant a cold job for Mr. Day and myself, as handling metal on the Barrier is not a thing one looks forward to with pleasure. Anyhow we set about it after Lieutenant Evans and Hooper had rigged up a screen to shelter us a bit, and by 10 P.M. we were finished and ready to proceed, but owing to a very low temperature we found it difficult to get the engines to go, so we decided to camp for the night.

"*28th October* 1911.

"Turned out and had another go at starting which took some little time owing again to the low temperature. We got away but again the trouble is always staring us in the face, overheating, and the surface is so bad and the pull so heavy and constant that it looks we are in for a rough time. We are continually waiting for one another to come up, and every time we stop something has to be done, my fan got jammed and delayed us some time, but have got it right again. Mr. Evans had to go back for his spare gear owing to some one [not] bringing it out in mistake; he had a good tramp as we were about 15 miles out from Hut Point.

"*29th October* 1911.

"Again we got away, but did not get far before the other car began to give trouble. I went back to see what was the matter, it seems the petrol is dirty due perhaps to putting in a new drum, anyhow got her up and camped for lunch. After lunch made a move, and all seemed to be going well when Mr. Day's car gave out at the crank brasses the same as mine, so we shall have to see what is the next best thing to do.

"*30th October* 1911.

"This morning before getting the car on the way had to reconstruct our loads as Mr. Day's car is finished and no more use for further service. We have got all four of us with one car now, things seems to be going fairly well, but we are still troubled with the overheating which means to say half our time is wasted. We can see dawning on us the harness before long. We covered seven miles and camped for the night. We are now about six miles from Corner Camp.

"*31st October* 1911.

"Got away with difficulty, and nearly reached Corner Camp, but the weather was unkind and forced us to camp early. One thing we have been able to bring along a good supply of pony food and most of the man food, but so far the motor sledges have proved a failure.

"*1st November* 1911.

"Started away with the usual amount of agony, and soon arrived at Corner Camp where we left a note to Captain Scott explaining the cause of our breakdown. I told Mr. Evans to say this sledge won't go much farther. After getting about a mile past Corner Camp my engine gave out finally, so here is an end to the motor sledges. I can't say I am sorry because I am not, and the others are, I think, of the same opinion as myself. We have had a heavy task pulling the heavy sledges up every time we stopped, which was pretty frequent, even now we have to start man-hauling we shall not be much more tired than we have already been at night when we had finished. Now comes the man-hauling part of the show, after reorganizing our sledge and taking aboard all the man food we can pull, we started with 190 lbs. per man, a strong head wind made it a bit uncomfortable for getting along, anyhow we made good about three miles and camped for the night. The surface not being very good made the travelling a bit heavy.

"After three days' man-hauling.

"*5th November* 1911.

"Made good about 14½ miles, if the surface would

only remain as it is now we could get along pretty well. We are now thinking of the ponies being on their way, hope they will get better luck than we had with the motor sledges, but by what I can see they will have a tough time of it.

"*6th November* 1911.

"To-day we have worked hard and covered a good distance 12 miles, surface rough but slippery, all seems to be going pretty well, but we have generally had enough by the time comes for us to camp.

"*7th November* 1911.

"We have again made good progress, but the light was very trying, sometimes we could not see at all where we were going. I tried to find some of the Cairns that were built by the Depôt Party last year, came upon one this afternoon which is about 20 miles from One Ton Depôt, so at the rate we have been travelling we ought to reach there some time to-morrow night. Temperature to-day was pretty low, but we are beginning to get hardened into it now.

"*8th November* 1911.

"Made a good start, but the surface is getting softer every day and makes our legs ache; we arrived at One Ton Depôt and camped. Then proceeded to dig out some of the provisions, we have to take on all the man food we can, this is a wild-looking place no doubt, have not seen anything of the ponies.

"*9th November* 1911.

"To-day we have started on the second stage of our journey. Our orders are to proceed one degree south of One Ton Depôt and wait for the ponies and dogs to come up with us; as we have been making good distances each day, the party will hardly overtake us, but we have found to-day the load is much heavier to drag. We have just over 200 lbs. per man, and we have been brought up on several occasions, and to start again required a pretty good strain on the rope, anyhow we done 10½ miles, a pretty good show considering all things.

"10*th November* 1911.

"Again we started off with plenty of vim, but it was jolly tough work, and it begins to tell on all of us; the surface to-day is covered with soft crystals which don't improve things. To-night Hooper is pretty well done up, but he have stuck it well and I hope he will, although he could not tackle the food in the best of spirits, we know he wanted it. Mr. Evans, Mr. Day and myself could eat more, as we are just beginning to feel the tightening of the belt. Made good 11¼ miles and we are now building cairns all the way, one about three miles: then again at lunch and one in the afternoon and one at night. This will keep us employed.

"11*th November* 1911.

"To-day it has been very heavy work. The surface is very bad and we are pretty well full up, but not with food; man-hauling is no doubt the hardest work one can do, no wonder the motor sledges could not stand it. I have been thinking of the trials I witnessed of the motor engines in Wolseley's works in Birmingham, they were pretty stiff but nothing compared to the drag of a heavy load on the Barrier surface.

"12*th November* 1911.

"To-day have been similar to the two previous days, but the light have been bad and snow have been falling which do not improve the surface; we have been doing 10 miles a day Geographical and quite enough too as we have all had enough by time it goes Camp.

"13*th November* 1911.

"The weather seems to be on the change. Should not be surprised if we don't get a blizzard before long, but of course we don't want that. Hooper seems a bit fagged but he sticks it pretty well. Mr. Day keeps on plodding, his only complaint is should like a little more to eat.

"14*th November* 1911.

"When we started this morning Mr. Evans said we had about 15 miles to go to reach the required distance.

The hauling have been about the same, but the weather is somewhat finer and the blizzard gone off. We did 10 miles and camped; have not seen anything of the main party yet but shall not be surprised to see them at any time.

"*15th November* 1911.

"We are camped after doing five miles where we are supposed to be [lat. 80° 32′]; now we have to wait the others coming up. Mr. Evans is quite proud to think we have arrived before the others caught us, but we don't expect they will be long although we have nothing to be ashamed of as our daily distance have been good. We have built a large cairn this afternoon before turning in. The weather is cold but excellent."

They waited there six days before the pony party arrived, when the Upper Barrier Depôt (Mount Hooper) was left in the cairn.

CHAPTER IX

THE POLAR JOURNEY

Come, my friends,
'Tis not too late to seek a newer world.
Push off, and sitting well in order smite
The sounding furrows; for my purpose holds
To sail beyond the sunset, and the baths
Of all the western stars, until I die.
It may be that the gulfs will wash us down:
It may be we shall touch the Happy Isles,
And see the great Achilles, whom we knew.
Tho' much is taken, much abides; and tho'
We are not now that strength which in old days
Moved earth and heaven; that which we are, we are;
One equal temper of heroic hearts,
Made weak by time and fate, but strong in will
To strive, to seek, to find, and not to yield.

TENNYSON, *Ulysses.*

Take it all in all it is wonderful that the South Pole was reached so soon after the North Pole had been conquered. From Cape Columbia to the North Pole, straight going, is 413 geographical miles, and Peary who took on his expedition 246 dogs, covered this distance in 37 days. From Hut Point to the South Pole and back is 1532 geographical or 1766 statute miles, the distance to the top of the Beardmore Glacier alone being more than 100 miles farther than Peary had to cover to the North Pole. Scott travelled from Hut Point to the South Pole in 75 days, and to the Pole and back to his last camp in 147 days, a period of five months. A. C.-G.

(All miles are geographical unless otherwise stated.)

I. THE BARRIER STAGE

THE departure from Cape Evans at 11 P.M. on November 1 is described by Griffith Taylor, who started a few days later on the second Geological Journey with his own party:

"On the 31st October the pony parties started. Two weak ponies led by Atkinson and Keohane were sent off first at 4.30, and I accompanied them for about a mile. Keohane's pony rejoiced in the name of Jimmy Pigg, and he stepped out much better than his fleeter-named mate Jehu. We heard through the telephone of their safe arrival at Hut Point.

"Next morning the Southern Party finished their mail, posting it in the packing case on Atkinson's bunk, and then at 11 A.M. the last party were ready for the Pole. They had packed the sledges overnight, and they took 20 lbs. personal baggage. The Owner had asked me what book he should take. He wanted something fairly filling. I recommended Tyndall's Glaciers—if he wouldn't find it 'coolish.' He didn't fancy this! So then I said, 'Why not take Browning, as I'm doing?' And I believe that he did so.

"Wright's pony was the first harnessed to its sledge. Chinaman is Jehu's rival for last place, and as some compensation is easy to harness. Seaman Evans led Snatcher, who used to rush ahead and take the lead as soon as he was harnessed. Cherry had Michael, a steady goer, and Wilson led Nobby—the pony rescued from the killer whales in March. Scott led out Snippets to the sledges, and harnessed him to the foremost, with little Anton's help—only it turned out to be Bowers' sledge! However he transferred in a few minutes and marched off rapidly to the south. Christopher, as usual, behaved like a demon. First they had to trice his front leg up tight under his shoulder, then it took five minutes to throw him. The sledge was brought up and he was harnessed in while his head was held down on the floe. Finally he rose up, still on three legs, and started off galloping as well as he was able. After several violent kicks his foreleg was released, and after more watch-spring flicks with his hind legs he set off fairly steadily. Titus can't stop him when once he has started, and will have to do the fifteen miles in one lap probably!

"Dear old Titus—that was my last memory of him.

Imperturbable as ever; never hasty, never angry, but soothing that vicious animal, and determined to get the best out of most unpromising material in his endeavour to do his simple duty.

"Bowers was last to leave. His pony, Victor, nervous but not vicious, was soon in the traces. I ran to the end of the Cape and watched the little cavalcade—already strung out into remote units—rapidly fade into the lonely white waste to southward.

"That evening I had a chat with Wilson over the telephone from the Discovery Hut—my last communication with those five gallant spirits."[1]

All the ponies arrived at Hut Point by 4 P.M., just in time to escape a stiff blow. Three of them were housed with ourselves inside the hut, the rest being put into the verandah. The march showed that with their loads the speed of the different ponies varied to such an extent that individuals were soon separated by miles. "It reminded me of a regatta or a somewhat disorganized fleet with ships of very unequal speed."[2]

It was decided to change to night marching, and the following evening we proceeded in the following order, which was the way of our going for the present. The three slowest ponies started first, namely, Jehu with Atkinson, Chinaman with Wright, James Pigg with Keohane. This party was known as the Baltic Fleet.

Two hours later Scott's party followed; Scott with Snippets, Wilson with Nobby, and myself with Michael.

Both these parties camped for lunch in the middle of the night's march. After another hour the remaining four men set to work to get Christopher into his sledge; when he was started they harnessed in their own ponies as quickly as possible and followed, making a non-stop run right through the night's march. It was bad for men and ponies, but it was impossible to camp in the middle of the march owing to Christopher. The composition of this party was, Oates with Christopher, Bowers

[1] Taylor, with Scott, *The Silver Lining*, pp. 325-326.
[2] *Scott's Last Expedition*, vol. i. p. 448.

with Victor, Seaman Evans with Snatcher, Crean with Bones.

Each of these three parties was self-contained with tent, cooker and weekly bag, and the times of starting were so planned that the three parties arrived at the end of the march about the same time.

There was a strong head wind and low drift as we rounded Cape Armitage on our way to the Barrier and the future. Probably there were few of us who did not wonder when we should see the old familiar place again.

Scott's party camped at Safety Camp as the Baltic fleet were getting under weigh again. Soon afterwards Ponting appeared with a dog sledge and a cinematograph,—how anomalous it seemed—which "was up in time to catch the flying rearguard which came along in fine form, Snatcher leading and being stopped every now and again—a wonderful little beast. Christopher had given the usual trouble when harnessed, but was evidently subdued by the Barrier Surface. However, it was not thought advisable to halt him, and so the party fled through in the wake of the advance guard." [1]

Immediately afterwards Scott's party packed up. "Good-bye and good luck," from Ponting, a wave of the hand not holding in a frisky pony and we had left the last link with the hut. "The future is in the lap of the gods; I can think of nothing left undone to deserve success." [2]

The general scheme was to average 10 miles (11.5 statute) a day from Hut Point to One Ton Depôt with the ponies lightly laden. From One Ton to the Gateway a daily average of 13 miles (15 statute) was necessary to carry twenty-four weekly units of food for four men each to the bottom of the glacier. This was the Barrier Stage of the journey, a distance of 369 miles (425 statute) as actually run on our sledge-meter. The twenty-four weekly units of food were to carry the Polar Party and two supporting parties forward to their farthest point, and back

[1] *Scott's Last Expedition*, vol. i. p. 449. [2] *Ibid.* p. 446.

again to the bottom of the Beardmore, where three more units were to be left in a depôt.[1]

All went well this first day on the Barrier, and encouraging messages left on empty petrol drums told us that the motors were going well when they passed. But the next day we passed five petrol drums which had been dumped. This meant that there was trouble, and some 14 miles from Hut Point we learned that the big end of the No. 2 cylinder of Day's motor had broken, and half a mile beyond we found the motor itself, drifted up with snow, and looking a mournful wreck. The next day's march (Sunday, November 5, A.M.) brought us to Corner Camp. There were a few legs down crevasses during the day but nothing to worry about.

From here we could see to the South an ominous mark in the snow which we hoped might not prove to be the second motor. It was: "the big end of No. 1 cylinder had cracked, the machine otherwise in good order. Evidently the engines are not fitted to working in this climate, a fact that should be certainly capable of correction. One thing is proved; the system of propulsion is altogether satisfactory."[2] And again: "It is a disappointment. I had hoped better of the machines once they got away on the Barrier Surface."[3]

Scott had set his heart upon the success of the motors. He had run them in Norway and Switzerland; and everything was done that care and forethought could suggest. At the back of his mind, I feel sure, was the wish to abolish the cruelty which the use of ponies and dogs necessarily entails. "A small measure of success will be enough to show their possibilities, their ability to revolutionize polar transport. Seeing the machines at work today [leaving Cape Evans] and remembering that every defect so far shown is purely mechanical, it is impossible not to be convinced of their value. But the trifling mechanical defects and lack of experience show the risk of cutting out trials. A season of experiment with a small

[1] See pp. 350, 552-556.

[2] *Scott's Last Expedition*, vol. i. p. 453.

[3] *Ibid.* p. 452.

workshop at hand may be all that stands between success and failure."[1] I do not believe that Scott built high hopes on these motors: but it was a chance to help those who followed him. Scott was always trying to do that.

Did they succeed or fail? They certainly did not help us much, the motor which travelled farthest drawing a heavy load to just beyond Corner Camp. But even so fifty statute miles is fifty miles, and that they did it at all was an enormous advance. The distance travelled included hard and soft surfaces, and we found later when the snow bridges fell in during the summer that this car had crossed safely some broad crevasses. Also they worked in temperatures down to – 30° Fahr. All this was to the good, for no motor-driven machine had travelled on the Barrier before. The general design seemed to be right, all that was now wanted was experience. As an experiment they were successful in the South, but Scott never knew their true possibilities; for they were the direct ancestors of the 'tanks' in France.

Night-marching had its advantages and disadvantages. The ponies were pulling in the colder part of the day and resting in the warm, which was good. Their coats dried well in the sun, and after a few days to get accustomed to the new conditions, they slept and fed in comparative comfort. On the other hand the pulling surface was undoubtedly better when the sun was high and the temperature warmer. Taking one thing with another there was no doubt that night-marching was better for ponies, but we seldom if ever tried it man-hauling.

Just now there was an amazing difference between day and night conditions. At midnight one was making short work of everything, nursing fingers after doing up harness with minus temperatures and nasty cold winds: by supper time the next morning we were sitting on our sledges writing up our diaries or meteorological logs, and even dabbling our bare toes in the snow, but not for long! Shades of darkness! How different all this was from what we had been through. My personal impression of

[1] *Scott's Last Expedition*, vol. i. p. 438-439.

E. A. Wilson, del.

CAMP ON THE BARRIER

this early summer sledging on the Barrier was one of constant wonder at its comfort. One had forgotten that a tent could be warm and a sleeping-bag dry: so deep were the contrary impressions that only actual experience was convincing. "It is a sweltering day, the air breathless, the glare intense—one loses sight of the fact that the temperature is low [– 22°], one's mind seeks comparison in hot sunlit streets and scorching pavements, yet six hours ago my thumb was frost-bitten. All the inconveniences of frozen footwear and damp clothes and sleeping-bags have vanished entirely." [1]

We could not expect to get through this windy area of Corner Camp without some bad weather. The wind-blown surface improved, the ponies took their heavier loads with ease, but as we came to our next camp it was banking up to the S.E. and the breeze freshened almost immediately. We built pony walls hurriedly and by the time we had finished supper it was blowing force 5 (A.M. November 6, Camp 4). There was a moderate gale with some drift all day which increased to force 8 with more drift at night. It was impossible to march. The drift took off a bit the next morning, and Meares and Dimitri with the two dog-teams appeared and camped astern of us. This was according to previous plan by which the dog-teams were to start after us and catch us up, since they travelled faster than the ponies. "The snow and drift necessitated digging out ponies again and again to keep them well sheltered from the wind. The walls made a splendid lee, but some sledges at the extremities were buried altogether, and our tent being rather close to windward of our wall got the back eddy and was continually being snowed up above the door. After noon the snow ceased except for surface drift. Snatcher knocked his section of the wall over, and Jehu did so more than ever. All ponies looked pretty miserable, as in spite of the shelter they were bunged up, eyes and all, in drift which had become ice and could not be removed without considerable difficulty." [2]

[1] *Scott's Last Expedition*, vol. i. p. 450. [2] Bowers.

Towards evening it ceased drifting altogether, but a wind, force 4, kept up with disconcerting regularity. Eventually Atkinson's party got away at midnight. "Castle Rock is still visible, but will be closed by the north end of White Island in the next march—then good-bye to the old landmarks for many a long day."[1]

The next day (November 8-9) "started at midnight and had a very pleasant march. Truly sledging in such weather is great. Mounts Discovery and Morning, which we gradually closed, looked fine in the general panorama of mountains. We are now nearly abreast the north end of the Bluff. We all came up to camp together this morning: it looked like a meet of the hounds, and Jehu ran away!!!"[2]

The next march was just the opposite. Wind force 5 to 6 and falling snow. "The surface was very slippery in parts and on the hard sastrugi it was a case of falling or stumbling continually. The light got so bad that one might have been walking in the clouds for all that could be discerned, and yet it was only snowing slightly. The Bluff became completely obscured, and the usual signs of a blizzard were accentuated.

"At lunch camp Scott packed up and followed us. We overhauled Atkinson about 1½ hours later, he having camped, and we were not sorry, as in addition to marching against a fresh southerly breeze the light brought a tremendous strain on the eyes in following tracks."[3] A little more than eight miles for the day's total.

We carried these depressing conditions for three more marches, that is till the morning of November 13. The surface was wretched, the weather horrid, the snow persistent, covering everything with soft downy flakes, inch upon inch, and mile upon mile. There are glimpses of despondency in the diaries. "If this should come as an exception, our luck will be truly awful. The camp is very silent and cheerless, signs that things are going awry."[4] "The weather was horrid, overcast, gloomy, snowy. One's spirits became very low."[5] "I expected these marches to be

[1] Bowers. [2] My own diary. [3] Bowers.
[4] *Scott's Last Expedition*, vol. i. p. 463. [5] *Ibid.* p. 462.

a little difficult, but not near so bad as to-day."[1] Indefinite conditions always tried Scott most: positive disasters put him into more cheerful spirits than most. In the big gale coming South when the ship nearly sank, and when we lost one of the cherished motors through the sea-ice, his was one of the few cheerful faces I saw. Even when the ship ran aground off Cape Evans he was not despondent. But this kind of thing irked him. Bowers wrote: "The unpleasant weather and bad surface, and Chinaman's indisposition, combined to make the outlook unpleasant, and on arrival [in camp] I was not surprised to find that Scott had a grievance. He felt that in arranging the consumption of forage his own unit had not been favoured with the same reduction as ours, in fact accused me of putting upon his three horses to save my own. We went through the weights in detail after our meal, and, after a certain amount of argument, decided to carry on as we were going. I can quite understand his feelings, and after our experience of last year a bad day like this makes him fear our beasts are going to fail us. The Talent [*i.e.* the doctors] examined Chinaman, who begins to show signs of wear. Poor ancient little beggar, he ought to be a pensioner instead of finishing his days on a job of this sort. Jehu looks pretty rocky too, but seeing that we did not expect him to reach the Glacier Tongue, and that he has now done more than 100 miles from Cape Evans, one really does not know what to expect of these creatures. Certainly Titus thinks, as he has always said, that they are the most unsuitable scrap-heap crowd of unfit creatures that could possibly be got together."[2]

"The weather was about as poisonous as one could wish; a fresh breeze and driving snow from the E. with an awful surface. The recently fallen snow thickly covered the ground with powdery stuff that the unfortunate ponies fairly wallowed in. If it was only ourselves to consider I should not mind a bit, but to see our best ponies being hit like this at the start is most distressing. A single march like that of last night must shorten their usefulness by

[1] *Scott's Last Expedition*, vol. i. p. 461. [2] Bowers.

days, and here we are a fortnight out, and barely one-third of the distance to the glacier covered, with every pony showing signs of wear. Victor looks a lean and lanky beast compared with his condition two weeks ago." [1]

But the ponies began to go better; and it was about this time that Jehu was styled the Barrier Wonder, and Chinaman the Thunderbolt. "Our four ponies have suffered most," writes Bowers. "I don't agree with Titus that it is best to march them right through without a lunch-camp. They were undoubtedly pretty tired, and worst of all did not go their feeds properly. It was a fine warm morning for them (Nov. 13); +15°, our warmest temperature hitherto. In the afternoon it came on to snow in large flakes like one would get at home. I have never seen such snow down here before; it makes the surface very bad for the sledges. The ponies' manes and rugs were covered in little knots of ice."

The next march (November 13-14) was rather better, though the going was very deep and heavy, and all the ponies were showing signs of wear and tear. This was followed by a delightfully warm day, and all the animals were standing drowsily in the sunshine. We could see the land far away behind us, the first sight of land we had had for many days. On November 15 we reached One Ton Depôt, having travelled a hundred and thirty miles from Hut Point.

The two sledges left standing were still upright, and the tattered remains of a flag flapped over the main cairn. In a salt tin lashed to the bamboo flag-pole was a note from Lieutenant Evans to say that he had gone on with the motor party five days before, and would continue man-hauling to 80° 30′ S. and await us there. "He has done something over 30 miles in $2\frac{1}{2}$ days—exceedingly good going." [2] We dug out the cairn, which we found just as we had left it except that there was a big tongue of drift, level with the top of the cairn to leeward, and running about 150 yards to N.E., showing that the prevailing wind here is S.W. Nine months before we had sprinkled some

[1] Bowers. [2] *Scott's Last Expedition*, vol. i. p. 465.

oats on the surface of the snow hoping to get a measurement of the accretion of snow during the winter. Unfortunately we were unable to find the oats again, but other evidence went to show that the snow deposit was very small. A minimum thermometer which was lashed with great care to a framework registered −73°. After the temperatures already experienced by us on the Barrier during the winter and spring this was surprisingly high, especially as our minimum temperatures were taken under the sledge, which means that the thermometer is shaded from radiation, while this thermometer at One Ton was left open to the sky. On the Winter Journey we found that a shaded thermometer registered −69° when an unshaded one registered −75°, a difference of 6°. All the provisions left here were found to be in excellent condition.

We then had a prolonged council of war. This meant that Scott called Bowers, and perhaps Oates, into our tent after supper was finished in the morning. Somehow these conferences were always rather serio-comic. On this occasion, as was usually the case, the question was ponies. It was decided to wait here one day and rest them, as there was ample food. The main discussion centred round the amount of forage to be taken on from here, while the state of the ponies, the amount they could pull and the distance they could go had to be taken into consideration.

"Oates thinks the ponies will get through, but that they have lost condition quicker than he expected. Considering his usually pessimistic attitude this must be thought a hopeful view. Personally I am much more hopeful. I think that a good many of the beasts are actually in better form than when they started, and that there is no need to be alarmed about the remainder, always excepting the weak ones which we have always regarded with doubt. Well, we must wait and see how things go."[1]

The decision made was to take just enough food to get the ponies to the glacier, allowing for the killing of some of them before that date. It was obvious that Jehu and

[1] *Scott's Last Expedition*, vol. i. p. 465.

Chinaman could not go very much farther, and it was also necessary that ponies should be killed in order to feed the dogs. The two dog-teams were carrying about a week's pony food, but they were unable to advance more than a fortnight from One Ton without killing ponies.

This decision practically meant that Scott abandoned the idea of taking ponies up the glacier. This was a great relief, for the crevassed state of the lower reaches of the glacier as described by Shackleton led us to believe that the attempt was suicidal. All the winter our brains were exercised to try and devise some method by which the ponies could be driven from behind, and by which the connection between pony and sledge could be loosed if the pony fell into a crevasse, but I confess that there seemed little chance of this happening. From all we saw of the glacier I am convinced that there is no reasonable chance of getting ponies up it, and that dogs could only be driven down it if the way up was most carefully surveyed and kept on the return. I am sure that in this kind of uncertainty the mental strain on the leader of a party is less than that on his men. The leader knows quite well what he thinks worth while risking or not: in this case Scott probably was always of the opinion that it would not be worth while taking ponies on to the glacier. The pony leaders, however, only knew that the possibility was ahead of them. I can remember now the relief with which we heard that it was not intended that Wilson should take Nobby, the fittest of our ponies, farther than the Gateway.

Up to now Christopher had lived up to his reputation, as the following extracts from Bowers' diary will show: "Three times we downed him, and he got up and threw us about, with all four of us hanging on like grim death. He nearly had me under him once ; he seems fearfully strong, but it is a pity he wastes so much good energy. . . . Christopher, as usual, was strapped on three legs and then got down on his knees. He gets more cunning each time, and if he does not succeed in biting or kicking one of us before long it won't be his fault. He

finds the soft snow does not hurt his knees like the sea-ice, and so plunges about on them *ad lib.* One's finnesko are so slippery that it is difficult to exert full strength on him, and to-day he bowled Oates over and got away altogether. Fortunately the lashing on his fourth leg held fast, and we were able to secure him when he rejoined the other animals. Finally he lay down, and thought he had defeated us, but we had the sledge connected up by that time, and as he got up we rushed him forward before he had time to kick over the traces. . . . Dimitri came and gave us a hand with Chris. Three of us hung on to him while the other two connected up the sledge. We had a struggle for over twenty minutes, and he managed to tread on me, but no damage done. . . . Got Chris in by a dodge. Titus did away with his back strap, and nearly had him away unaided before he realized that the hated sledge was fast to him. Unfortunately he started off just too soon, and bolted with only one trace fast. This pivoted him to starboard, and he charged the line. I expected a mix-up, but he stopped at the wall between Bones and Snatcher, and we cast off and cleared sledge before trying again. By laying the traces down the side of the sledge instead of ahead we got him off his guard again, and he was away before he knew what had occurred. . . . We had a bad time with Chris again. He remembered having been bluffed before, and could not be got near the sledge at all. Three times he broke away, but fortunately he always ran back among the other ponies, and not out on to the Barrier. Finally we had to down him, and he was so tired with his recent struggles that after one abortive attempt we got him fast and away."

Meanwhile it was not so much the difficulties of sledging as the depressing blank conditions in which our march was so often made, that gave us such troubles as we had. The routine of a tent makes a lot of difference. Scott's tent was a comfortable one to live in, and I was always glad when I was told to join it, and sorry to leave. He was himself extraordinarily quick, and no time was ever lost by his party in camping or breaking camp. He

was most careful, some said over-careful but I do not think so, that everything should be neat and shipshape, and there was a recognized place for everything. On the Depôt Journey we were bidden to see that every particle of snow was beaten off our clothing and finnesko before entering the tent: if it was drifting we had to do this after entering and the snow was carefully cleared off the floor-cloth. Afterwards each tent was supplied with a small brush with which to perform this office. In addition to other obvious advantages this materially helped to keep clothing, finnesko, and sleeping-bags dry, and thus prolong the life of furs. "After all is said and done," said Wilson one day after supper, "the best sledger is the man who sees what has to be done, and does it—and says nothing about it." Scott agreed. And if you were "sledging with the Owner" you had to keep your eyes wide open for the little things which cropped up, and do them quickly, and say nothing about them. There is nothing so irritating as the man who is always coming in and informing all and sundry that he has repaired his sledge, or built a wall, or filled the cooker, or mended his socks.

I moved into Scott's tent for the first time in the middle of the Depôt Journey, and was enormously impressed by the comfort which a careful routine of this nature evoked. There was a homelike air about the tent at supper time, and, though a lunch camp in the middle of the night is always rather bleak, there was never anything slovenly. Another thing which struck me even more forcibly was the cooking. We were of course on just the same ration as the tent from which I had come. I was hungry and said so. "Bad cooking," said Wilson shortly; and so it was. For in two or three days the sharpest edge was off my hunger. Wilson and Scott had learned many a cooking tip in the past, and, instead of the same old meal day by day, the weekly ration was so manœuvred by a clever cook that it was seldom quite the same meal. Sometimes pemmican plain, or thicker pemmican with some arrowroot mixed with it: at others we surrendered a biscuit and a half apiece and had a dry hoosh, *i.e.* biscuit fried in pemmican

with a little water added, and a good big cup of cocoa to follow. Dry hooshes also saved oil. There were cocoa and tea upon which to ring the changes, or better still 'teaco' which combined the stimulating qualities of tea with the food value of cocoa. Then much could be done with the dessert-spoonful of raisins which was our daily whack. They were good soaked in the tea, but best perhaps in with the biscuits and pemmican as a dry hoosh. "You are going far to earn my undying gratitude, Cherry," was a satisfied remark of Scott one evening when, having saved, unbeknownst to my companions, some of their daily ration of cocoa, arrowroot, sugar and raisins, I made a "chocolate hoosh." But I am afraid he had indigestion next morning. There were meals when we had interesting little talks, as when I find in my diary that: "we had a jolly lunch meal, discussing authors. Barrie, Galsworthy and others are personal friends of Scott. Some one told Max Beerbohm that he was like Captain Scott, and immediately, so Scott assured us, he grew a beard."

But about three weeks out the topics of conversation became threadbare. From then onwards it was often that whole days passed without conversation beyond the routine Camp ho! All ready? Pack up. Spell ho. The latter after some two hours' pulling. When man-hauling we used to start pulling immediately we had the tent down, the sledge packed and our harness over our bodies and ski on our feet. After about a quarter of an hour the effects of the marching would be felt in the warming of hands and feet and the consequent thawing of our mitts and finnesko. We then halted long enough for everybody to adjust their ski and clothing: then on, perhaps for two hours or more, before we halted again.

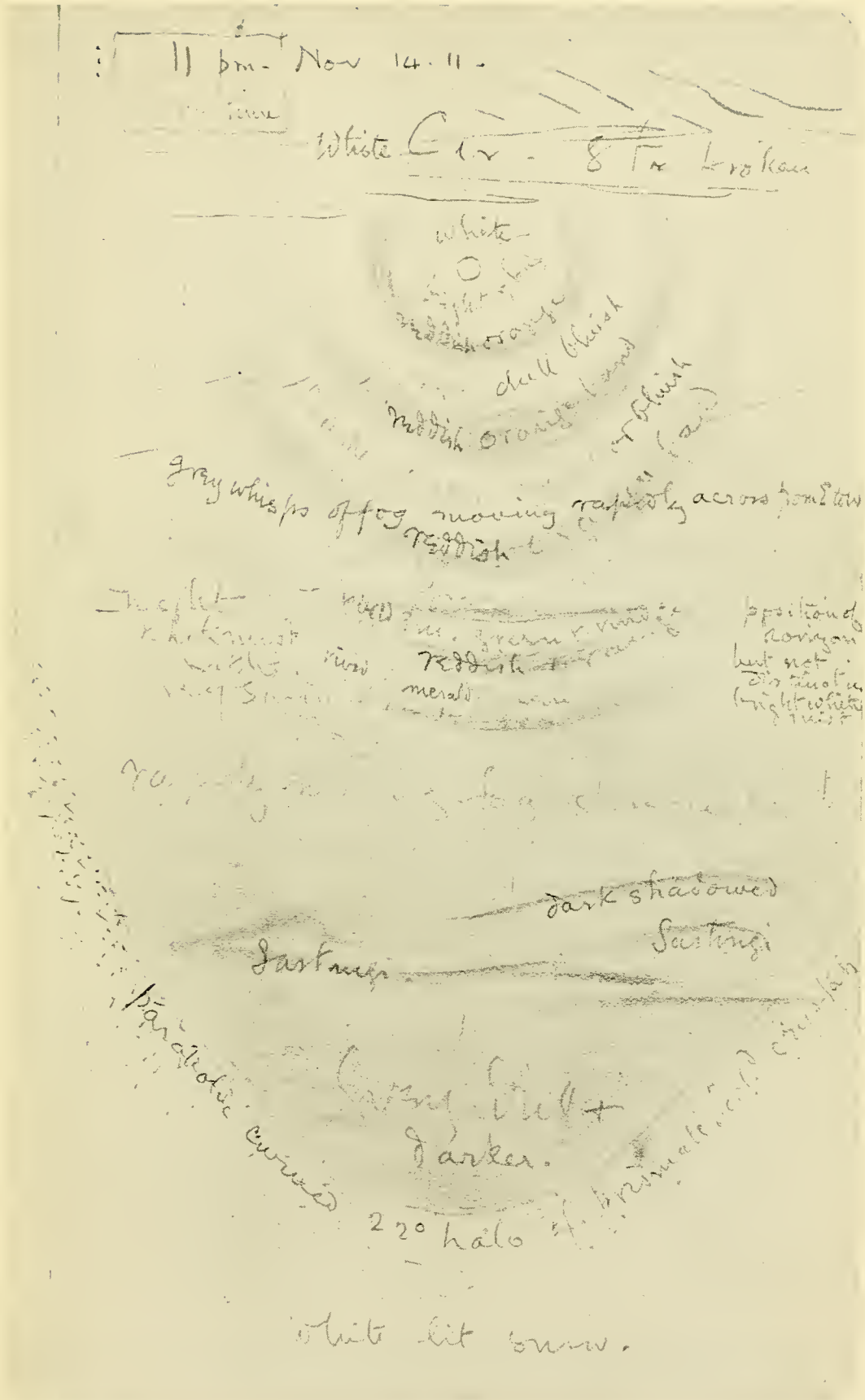
Since it had been decided to lighten the ponies' weights, we left at least 100 lbs. of pony forage behind when we started from One Ton on the night of November 16-17 on our first 13-mile march. This was a distinct saving, and instead of 695 lbs. each with which the six stronger ponies left Corner Camp, they now pulled only 625 lbs. Jehu had only 455 lbs. and Chinaman 448 lbs. The dog-teams had

860 lbs. of pony food between them, and according to plan the two teams were to carry 1570 lbs. from One Ton between them. These weights included the sledges, with straps and fittings, which weighed about 45 lbs.

Summer seemed long in coming for we marched into a considerable breeze and the temperature was – 18°. Oates and Seaman Evans had quite a crop of frost-bites. I pointed out to Meares that his nose was gone; but he left it, saying that he had got tired of it, and it would thaw out by and by. The ponies were going better for their rest. The next day's march was over crusty snow with a layer of loose powdery snow at the top, and a temperature of – 21° was chilly. Towards the end of it Scott got frightened that the ponies were not going as well as they should. Another council of war was held, and it was decided that an average of thirteen miles a day must be done at all costs, and that another sack of forage should be dumped here, putting the ponies on short rations later, if necessary. Oates agreed, but said the ponies were going better than he expected: that Jehu and Chinaman might go a week, and almost certainly would go three days. Bowers was always against this dumping. Meanwhile Scott wrote: "It's touch and go whether we scrape up to the glacier; meanwhile we get along somehow." [1]

As a result of one of Christopher's tantrums Bowers records that his sledge-meter was carried away this morning: "I took my sledge-meter into the tent after breakfast and rigged up a fancy lashing with raw hide thongs so as to give it the necessary play with security. A splendid parhelia exhibition was caused by the ice-crystals. Round the sun was a 22° halo [that is a halo 22° from the sun's image], with four mock suns in rainbow colours, and outside this another halo in complete rainbow colours. Above the sun were the arcs of two other circles touching these halos, and the arcs of the great all-round circle could be seen faintly on either side. Below was a dome-shaped glare of white which contained an exaggerated mock sun, which was as dazzling as the sun himself. Altogether a fine

[1] *Scott's Last Expedition*, vol. i: p: 468:



E. A. Wilson, del

PARHELIA

example of a pretty common phenomenon down here." And the next day: "We saw the party ahead in inverted mirage some distance above their heads."

In the next three marches we covered our daily 13 miles, for the most part without very great difficulty. But poor Jehu was in a bad way, stopping every few hundred yards. It was a funereal business for the leaders of these crock ponies; and at this stage of the journey Atkinson, Wright and Keohane had many more difficulties than most of us, and the success of their ponies was largely due to their patience and care. Incidentally big icicles formed upon the ponies' noses during the march and Chinaman used Wright's windproof blouse as a handkerchief. During the last of these marches, that is on the morning of November 21, we saw a massive cairn ahead, and found there the motor party, consisting of Lieutenant Evans, Day, Lashly and Hooper. The cairn was in 80° 32′, and under the name Mount Hooper formed our Upper Barrier Depôt. We left there three S (summit) rations, two cases of emergency biscuits and two cases of oil, which constituted three weekly food units for the three parties which were to advance from the bottom of the Beardmore Glacier. This food was to take them back from 80° 32′ to One Ton Camp. We all camped for the night 3 miles farther on: sixteen men, five tents, ten ponies, twenty-three dogs and thirteen sledges.

The man-hauling party had been waiting for six days; and, having expected us before, were getting anxious about us. They declared that they were very hungry, and Day, who was always long and thin, looked quite gaunt. Some spare biscuits which we gave them from our tent were carried off with gratitude. The rest of us who were driving dogs or leading ponies still found our Barrier ration satisfying.

We had now been out three weeks and had travelled 192 miles, and formed a very good idea as to what the ponies could do. The crocks had done wonderfully:— "We hope Jehu will last three days; he will then be finished in any case and fed to the dogs. It is amusing to see Meares looking eagerly for the chance of a feed for his

animals; he has been expecting it daily. On the other hand, Atkinson and Oates are eager to get the poor animal beyond the point at which Shackleton killed his first beast. Reports on Chinaman are very favourable, and it really looks as though the ponies are going to do what is hoped of them."[1] From first to last Nobby, who was rescued from the floe, was the strongest pony we had, and was now drawing a heavier load than any other pony by 50 lbs. He was a well-shaped, contented kind of animal, misnamed a pony. Indeed several of our beasts were too large to fit this description. Christopher, of course, was wearing himself out quicker than most, but all of them had lost a lot of weight in spite of the fact that they had all the oats and oil-cake they could eat. Bowers writes of his pony:

"Victor, my pony, has taken to leading the line, like his opposite number last season. He is a steady goer, and as gentle as a dear old sheep. I can hardly realize the strenuous times I had with him only a month ago, when it took about four of us to get him harnessed to a sledge, and two of us every time with all our strength to keep him from bolting when in it. Even at the start of the journey he was as nearly unmanageable as any beast could be, and always liable to bolt from sheer excess of spirits. He is more sober now after three weeks of featureless Barrier, but I think I am more fond of him than ever. He has lost his rotundity, like all the other horses, and is a long-legged, angular beast, very ugly as horses go, but still I would not change him for any other."

The ponies were fed by their leaders at the lunch and supper halts, and by Oates and Bowers during the sleep halt about four hours before we marched. Several of them developed a troublesome habit of swinging their nosebags off, some as soon as they were put on, others in their anxiety to reach the corn still left uneaten in the bottom of the bag. We had to lash their bags on to their headstalls. "Victor got hold of his head rope yesterday, and devoured it: not because he is hungry, as he won't eat all his allowance even now."[2]

[1] *Scott's Last Expedition*, vol. i. pp. 470, 471. [2] Bowers.

The original intention was that Day and Hooper should return from 80° 30′, but it was now decided that their unit of four should remain intact for a few days, and constitute a light man-hauling advance party to make the track.

The weather was much more pleasant and we saw the sun most days, while I note only one temperature below − 20° since leaving One Ton. The ponies sank in a cruel distance some days, but we were certainly not overworking them and they had as much food as they could eat. We knew the grim part was to come, but we never realized how grim it was to be. From this Northern Barrier Depôt the ponies were mostly drawing less than 500 lbs. and we had hopes of getting through to the glacier without much difficulty. All depended on the weather, and just now it was glorious, and the ponies were going steadily together. Jehu, the crockiest of the crocks, was led back along the track and shot on the evening of November 24, having reached a point at least 15 miles beyond that where Shackleton shot his first pony. When it is considered that it was doubtful whether he could start at all this must be conceded to have been a triumph of horse-management in which both Oates and Atkinson shared, though neither so much as Jehu himself, for he must have had a good spirit to have dragged his poor body so far. "A year's care and good feeding, three weeks' work with good treatment, a reasonable load and a good ration, and then a painless end. If anybody can call that cruel I cannot either understand it or agree with them." Thus Bowers, who continues: "The midnight sun reflected from the snow has started to burn my face and lips. I smear them with hazeline before turning in, and find it a good thing. Wearing goggles has absolutely prevented any recurrence of snow-blindness. Captain Scott says they make me see everything through rose-coloured spectacles."

We said good-bye to Day and Hooper next morning, and they set their faces northwards and homewards.[1] Two-

[1] A note to Cape Evans is as follows:—My dear Simpson. This goes with Day and Hooper now returning. We are making fair progress and the ponies doing fairly well. I hope we shall get through to the glacier without difficulty, but to make sure I am carrying the dog-teams farther than I intended at first—the teams may be late returning, unfit for further work or non-existent. . . .—R. Scott.

men parties on the Barrier are not much fun. Day had certainly done his best about the motors and they had helped us over a bad bit of initial surface. That night Scott wrote: "Only a few more marches to feel safe in getting to our goal."[1] At the lunch halt on November 26, in lat. 81° 35′, we left our Middle Barrier Depôt, containing one week's provisions for each returning unit as at Mount Hooper, a reduction of 200 lbs. in our weights. The march that day was very trying. "It is always rather dismal work walking over the great snow plain when sky and surface merge in one pall of dead whiteness, but it is cheering to be in such good company with everything going on steadily and well."[2]

There was no doubt that the animals were tiring, and "a tired animal makes a tired man, I find."[3] The next day (November 28) was no better: "the most dismal start imaginable. Thick as a hedge, snow falling and drifting with keen southerly wind."[4]

Bowers notes: "We have now run down a whole degree of latitude without a fine day, or anything but clouds, mist, and driving snow from the south." We certainly did have some difficult marches, one of the worst effects of which was that we knew we must be making a winding course and we had to pick up our depôts on the return somehow. Here is a typical bad morning from Bowers' diary:

"The first four miles of the march were utter misery for me, as Victor, either through lassitude or because he did not like having to plug into the wind, went as slow as a funeral horse. The light was so bad that wearing goggles was most necessary, and the driving snow filled them up as fast as you cleared them. I dropped a long way astern of the cavalcade, could hardly see them at times through the snow, but the fear that Victor, of all the beasts, should give out was like a nightmare. I have always been used to starting later than the others by a quarter of a mile, and catching them up. At the four-mile cairn I was about fed

[1] *Scott's Last Expedition*, vol. i. p. 474.
[2] *Ibid.* p. 475.
[3] *Ibid.* p. 476.
[4] *Ibid.* p. 476.

up to the neck with it, but I said very little as everybody was so disgusted with the weather and things in general that I saw that I was not the only one in tribulation. Victor turned up trumps after that. He stepped out and led the line in his old place, and at a good swinging pace considering the surface, my temper and spirits improving at every step. In the afternoon he went splendidly again, and finished up by rolling in the snow when I had taken his harness off, a thing he has not done for ten or twelve days. It certainly does not look like exhaustion!"

Indeed these days we were fighting for our marches, and Chinaman who was killed this night seemed well out of it. He reached a point less than 90 miles from the glacier, though this was small comfort to him.

Stumbling and groping our way along as we had been during the last blizzard we were totally unprepared for the sight which met us during our next march on November 29. The great ramp of mountains which ran to the west of us, and would soon bar our way to the South, partly cleared: and right on top of us it seemed were the triple peaks of Mount Markham. After some 300 miles of bleak, monotonous Barrier it was a wonderful sight indeed. We camped at night in latitude 82° 21′ S., four miles beyond Scott's previous Farthest South in 1902. Then they had the best of luck in clear fine weather, which Shackleton has also recorded at this stage of his southern journey.

It is curious to see how depressed all our diaries become when this bad weather obtained, and how quickly we must have cheered up whenever the sun came out. There is no doubt that a similar effect was produced upon the ponies. Truth to tell, the mental strain upon those responsible was very great in these early days, and there is little of outside interest to relieve the mind. The crystal surface which was an invisible carpet yesterday becomes a shining glorious sheet of many colours to-day: the irregularities which caused you so many falls are now quite clear and you step on or over them without a thought: and when there is added some of the most wonderful scenery in the world it

is hard to recall in the enjoyment of the present how irritable and weary you felt only twenty hours ago. The whisper of the sledge, the hiss of the primus, the smell of the hoosh and the soft folds of your sleeping-bag: how jolly they can all be, and generally were.

I would that I could once again
  Around the cooker sit
And hearken to its soft refrain
  And feel so jolly fit.

Instead of home-life's silken chains,
  The uneventful round,
I long to be mid snow-swept plains,
  In harness, outward bound.

With the pad, pad, pad, of fin'skoed feet,
  With two hundred pounds per man,
Not enough hoosh or biscuit to eat,
  Well done, lads! Up tent! Outspan.

(Nelson in *The South Polar Times*.)

Certainly as we skirted these mountains, range upon range, during the next two marches (November 30 and December 1), we felt we could have little cause for complaint. They brought us to lat. 82° 47′ S., and here we left our last depôt on the Barrier, called the Southern Barrier Depôt, with a week's ration for each returning party as usual. "The man food is enough for one week for each returning unit of four men, the next depôt beyond being the Middle Barrier Depôt, 73 miles north. As we ought easily to do over 100 miles a week on the return journey, there is little likelihood of our having to go on short commons if all goes well."[1] And this was what we all felt—until we found the Polar Party. This was our twenty-seventh camp, and we had been out a month.

It was important that we should have fine clear weather during the next few days when we should be approaching the land. On his previous southern journey Scott had been prevented from reaching the range of mountains which ran along to our right by a huge chasm. This phenomenon is known to geologists as a shear crack and is formed by the

[1] Bowers.

THE MOUNTAINS WHICH LIE BETWEEN THE BARRIER AND THE PLATEAU AS SEEN ON DECEMBER [illegible]

FROM THE DRAWING BY DR E A WILSON

movement of a glacier away from the land which bounds it. In this case a mass of many hundred miles of Barrier has moved away from the mountains, and the disturbance is correspondingly great. Shackleton has described how he approached the Gateway, as he named the passage between Mount Hope and the mainland, by means of which he passed through on to the Beardmore Glacier. As he and his companions were exploring the way they came upon an enormous chasm, 80 feet wide and 300 feet deep, which barred their path. Moving along to the right they found a place where the chasm was filled with snow, and here they crossed to the land some miles ahead. At our Southern Barrier Depôt we reckoned we were some forty-four miles from this Gateway and in three more marches we hoped to be camped under this land.

Christopher was shot at the depôt. He was the only pony who did not die instantaneously. Perhaps Oates was not so calm as usual, for Chris was his own horse though such a brute. Just as Oates fired he moved, and charged into the camp with the bullet in his head. He was caught with difficulty, nearly giving Keohane a bad bite, led back and finished. We were well rid of him: while he was strong he fought, and once the Barrier had tamed him, as we were not able to do, he never pulled a fair load. He could have gone several more days, but there was not enough pony food to take all the animals forward. We began to wonder if we had done right to leave so much behind. Each pony provided at least four days' food for the dog-teams, some of them more, and there was quite a lot of fat on them—even on Jehu. This was comforting, as going to prove that their hardships were not too great. Also we put the undercut into our own hoosh, and it was very good, though we had little oil to cook it.

We had been starting later each night, in order that the transition from night to day marching might be gradual. For we intended to march by day when we started pulling up the glacier, and there were no ponies to rest when the sun was high. It may be said therefore that our next march was on December 2.

Before we started Scott walked over to Bowers. "I have come to a decision which will shock you." Victor was to go at the end of the march, because pony food was running so short. Birdie wrote at the end of the day:— He "did a splendid march and kept ahead all day, and as usual marched into camp first, pulling over 450 lbs. easily. It seemed an awful pity to have to shoot a great strong animal, and it seemed like the irony of fate to me, as I had been downed for over-provisioning the ponies with needless excess of food, and the drastic reductions had been made against my strenuous opposition up to the last. It is poor satisfaction to me to know that I was right now that my horse is dead. Good old Victor! He has always had a biscuit out of my ration, and he ate his last before the bullet sent him to his rest. Here ends my second horse in 83° S., not quite so tragically as my first when the sea-ice broke up, but none the less I feel sorry for a beast that has been my constant companion and care for so long. He has done his share in our undertaking anyhow, and may I do my share as well when I get into harness myself.

"The snow has started to fall over his bleak resting-place, and it looks like a blizzard. The outlook is dark, stormy and threatening."

Indeed it had been a dismal march into a blank white wall, and the ponies were sinking badly in the snow, leaving holes a full foot deep. The temperature was +17° and the flakes of snow melted when they lay on the dark colours of the tents and our furs. After building the pony walls water was running down our windproofs.

I note "we are doing well on pony meat and go to bed very content." Notwithstanding the fact that we could not do more than heat the meat by throwing it into the pemmican we found it sweet and good, though tough. The man-hauling party consisted of Lieut. Evans and Lashly who had lost their motors, and Atkinson and Wright who had lost their ponies. They were really quite hungry by now, and most of us pretty well looked forward to our meals and kept a biscuit to eat in our bags if we could. The pony meat therefore came as a relief. I think we ought to have

depôted more of it on the cairns. As it was, what we did not eat was given to the dogs. With some tins of extra oil and a depôted pony the Polar Party would probably have got home in safety.

On December 3 we roused out at 2.30 A.M. It was thick and snowy. As we breakfasted the blizzard started from the south-east, and was soon blowing force 9, a full gale, with heavy drift. "The strongest wind I have known here in summer."[1] It was impossible to start, but we turned out and made up the pony walls in heavy drift, one of them being blown down three times. By 1.30 P.M. the sun was shining, and the land was clear. We started at 2, with what we thought was Mount Hope showing up ahead, but soon great snow-clouds were banking up and in two hours we were walking in a deep gloom which made it difficult to find the track made by the man-hauling party ahead. By the time we reached the cairn, which was always built at the end of the first four miles, it was blowing hard from the N.N.W. of all the unlikely quarters of the compass. Bowers and Scott were on ski.

"I put on my windproof blouse and nosed out the track for two miles, when we suddenly came upon the tent of the leading party. They had camped owing to the difficulty of steering a course in such thick weather. The ponies, however, with the wind abaft the beam were going along splendidly, and Scott thought it worth while to shove on. We therefore carried on another four miles, making ten in all, a good half march, before we camped. On ski it was simply ripping, except for the inability to see anything at all. With the wind behind, and the good sliding surface made by the wind-hardened snow, one fairly slithered along. Camping was less pleasant as it was blowing a gale by that time. We are all in our bags again now, with a good hot meal inside one, and blow high or blow low one might be in a worse place than a reindeer bag."[2]

It was all right for the people on ski (and this in itself gave us a certain sense of grievance), but things had not

[1] *Scott's Last Expedition*, vol. i. p. 483. [2] Bowers.

been so easy with the ponies, who were sinking very deeply in places, while we ourselves were sinking well over our ankles. This day we began to cross the great undulations in the Barrier, with the crests some mile apart, which here mark the approach to the land. We had built the walls to the north of the ponies on camping, because the wind was from that direction, but by breakfast on December 4 it was blowing a thick blizzard from the south-east. We began to feel bewildered by these extraordinary weather changes, and not a little exasperated too. Again we could not march, and again we had to dig out the sledges and ponies, and to move them all round to the other side of the walls which we had partly to rebuild. "Oh for the simple man-hauling life!" was our thought, and "poor helpless beasts—this is no country for live stock." By this time we could not see the neighbouring tents for the drift. The situation was not improved by the fact that our tent doors, the tents having been pitched for the strong north wind then blowing, were now facing the blizzard, and sheets of snow entered with each individual. The man-hauling party came up just before the worst of the blizzard started. The dogs alone were comfortable, buried deep beneath the drifted snow. The sailors began to debate who was the Jonah. They said he was the cameras. The great blizzard was brewing all about us.

But at mid-day as though a curtain was rolled back, the thick snow fog cleared off, while at the same time the wind fell calm, and a great mountain appeared almost on the top of us. Far away to the south-east we could distinguish, by looking very carefully, a break in the level Barrier horizon —a new mountain which we reckoned must be at least in latitude 86° and very high. Towards it the ranges stretched away, peak upon peak, range upon range, as far as the eye could see. "The mountains surpassed anything I have ever seen: beside the least of these giants Ben Nevis would be a mere mound, and yet they are so immense as to dwarf each other. They are intersected at every turn with mighty glaciers and ice-falls and eternally ice-filled valleys that defy description. So clear was everything that every

rock seemed to stand out, and the effect of the sun as he came round (between us and the mountains) was to make the scene still more beautiful." [1]

Altogether we marched eleven miles this day, and camped right in front of the Gateway, which we reckoned to be some thirteen miles away. We saw no crevasses but crossed ten or twelve very large undulations, and estimated that the dips between them were twelve to fifteen feet. Mount Hope was bigger than we expected, and beyond it, stretching out into the Barrier as far as we could see, was a great white line of jagged edges, the chaos of pressure which this vast glacier makes as it flows into the comparatively stationary ice of the Barrier.

My own pony Michael was shot after we came into camp. He was as attractive a little beast as we had. His light weight helped him on soft surfaces, but his small hoofs let him in farther than most and I notice in Scott's diary that on November 19 the ponies were sinking halfway to the hock, and Michael once or twice almost to the hock itself. A highly strung, spirited animal, his off days took the form of fidgets, during which he would be constantly trying to stop and eat snow, and then rush forward to catch up the other ponies. Life was a constant source of wonder to him, and no movement in the camp escaped his notice. Before we had been long on the Barrier he developed mischievous habits and became a rope eater and gnawer of other ponies' fringes, as we called the coloured tassels we hung over their eyes to ward off snow-blindness. However, he was by no means the only culprit, and he lost his own fringe to Nobby quite early in the proceedings. It was not that he was hungry, for he never quite finished his own feed. At any rate he enjoyed the few weeks before he died, pricking up his ears and getting quite excited when anything happened, and the arrival of the dog-teams each morning after he had been tethered sent him to bed with much to dream of. And I must say his master dreamed pretty regularly too. Michael was killed right in front of the Gateway on December 4, just before the big blizzard, which,

[1] Bowers.

though we did not know it, was on the point of breaking upon us, and he was untying his cloth and chewing up everything he could reach to the last. "It was decided after we camped, and he had his feed already on: Meares reported that he had no more food for the dogs. He walked away, and rolled in the snow on the way down, not having done so when we got in. He was just like a naughty child all the way, and pulled all out. He has been a good friend, and has a good record, 82° 23′ S. He was a bit done to-day: the blizzard had knocked him. Gallant little Michael!"[1]

As we got into our bags the mountain tops were fuzzy with drift. We wanted one clear day to get across the chasm: one short march and the ponies' task was done. Their food was nearly finished. Scott wrote that night: "We are practically through with the first stage of our journey."[2]

"Tuesday, December 5. Camp 30. Noon. We awoke this morning to a raging howling blizzard. The blows we have had hitherto have lacked the very fine powdering snow, that especial feature of the blizzard. To-day we have it fully developed. After a minute or two in the open one is covered from head to foot. The temperature is high, so that what falls or drives against one sticks. The ponies—heads, tails, legs and all parts not protected by their rugs—are covered with ice; the animals are standing deep in snow, the sledges are almost covered, and huge drifts above the tents. We have had breakfast, rebuilt the walls, and are now again in our bags. One cannot see the next tent, let alone the land. What on earth does such weather mean at this time of year? It is more than our share of ill-fortune, I think, but the luck may turn yet. . . .

"11 P.M. It has blown hard all day with quite the greatest snowfall I remember. The drifts about the tents are simply huge. The temperature was +27° this forenoon, and rose to +31° in the afternoon, at which time the snow melted as it fell on anything but the snow, and, as a consequence, there are pools of water on everything, the tents are wet through, also the wind-clothes, night-boots,

[1] My own diary.

[2] *Scott's Last Expedition*, vol. i. p. 486.

etc.; water drips from the tent poles and door, lies on the floor-cloth, soaks the sleeping-bags, and makes everything pretty wretched. If a cold snap follows before we have had time to dry our things, we shall be mighty uncomfortable. Yet after all it would be humorous enough if it were not for the seriousness of delay—we can't afford that, and it's real hard luck that it should come at such a time. The wind shows signs of easing down, but the temperature does not fall and the snow is as wet as ever, not promising signs of abatement.

"Wednesday, December 6. Camp 30. Noon. Miserable, utterly miserable. We have camped in the 'Slough of Despond.' The tempest rages with unabated violence. The temperature has gone to +33°; everything in the tent is soaking. People returning from the outside look exactly as though they had been in a heavy shower of rain. They drip pools on the floor-cloth. The snow is steadily climbing higher about walls, ponies, tents and sledges. The ponies look utterly desolate. Oh! But this is too crushing, and we are only 12 miles from the glacier. A hopeless feeling descends on one and is hard to fight off. What immense patience is needed for such occasions!"[1]

Bowers describes the situation as follows:

"It is blowing a blizzard such as one might expect to be driven at us by all the powers of darkness. It may be interesting to describe it, as it is my first experience of a really warm blizzard, and I hope to be troubled by cold ones only, or at least moderate ones only, in future as regards temperature.

"When I swung the thermometer this morning I looked and looked again, but unmistakably the temperature was +33° F., above freezing point (out of the sun's direct rays) for the first time since we came down here. What this means to us nobody can conceive. We try to treat it as a huge joke, but our wretched condition might be amusing to read of it later. We are wet through, our tents are wet, our bags which are our life to us and the objects of our greatest care, are wet; the poor ponies are

[1] *Scott's Last Expedition*, vol. i. pp. 486-489.

soaked and shivering far more than they would be ordinarily in a temperature fifty degrees lower. Our sledges—the parts that are dug out—are wet, our food is wet, everything on and around and about us is the same—wet as ourselves and our cold, clammy clothes. Water trickles down the tent poles and only forms icicles in contact with the snow floor. The warmth of our bodies has formed a snow bath in the floor for each of us to lie in. This is a nice little catchwater for stray streams to run into before they freeze. This they cannot do while a warm human lies there, so they remain liquid and the accommodating bag mops them up. When we go out to do the duties of life, fill the cooker, etc., for the next meal, dig out or feed the ponies, or anything else, we are bunged up with snow. Not the driving, sandlike snow we are used to, but great slushy flakes that run down in water immediately and stream off you. The drifts are tremendous, the rest of the show is indescribable. I feel most for the unfortunate animals and am thankful that poor old Victor is spared this. I mended a pair of half mitts to-day, and we are having two meals instead of three. This idleness when one is simply jumping to go on is bad enough for most, but must be worse for Captain Scott. I feel glad that he has Dr. Bill (Wilson) in his tent; there is something always so reassuring about Bill, he comes out best in adversity." [1]

"Thursday, December 7. Camp 30. The storm continues and the situation is now serious. One small feed remains for the ponies after to-day, so that we must either march to-morrow or sacrifice the animals. That is not the worst; with the help of the dogs we could get on, without doubt. The serious part is that we have this morning started our Summit rations—that is to say, the food calculated from the Glacier Depôt has been begun. The first supporting party can only go on a fortnight from this date and so forth." [2]

This day was just as warm, and wetter—much wetter. The temperature was $+35.5^{\circ}$, and our bags were like sponges. The huge drifts had covered everything, includ-

[1] Bowers. [2] *Scott's Last Expedition*, vol. i. p. 489.

A PONY CAMP ON THE BARRIER

THE DOG TEAMS LEAVING THE BEARDMORE GLACIER

ing most of the tent, the pony walls and sledges. At intervals we dug our way out and dug up the wretched ponies, and got them on to the top again. "Henceforward our full ration will be 16 oz. biscuit, 12 oz. pemmican, 2 oz. butter, 0.57 oz. cocoa, 3.0 oz. sugar and 0.86 oz. tea. This is the Summit ration, total 34.43 oz., with a little onion powder and salt. I am all for this: Seaman Evans and others are much regretting the loss of chocolate, raisins and cereals. For the first week up the glacier we are to go one biscuit short to provision Meares on the way back. The motors depôted too much and Meares has been brought on far farther than his orders were originally bringing him. Originally he was to be back at Hut Point on December 10. The dogs, however, are getting all the horse that is good for them, and are very fit. He has to average 24 miles a day going back. Michael is well out of this: we are now eating him. He was in excellent condition and tastes very good, though tough." [1]

By this time there was little sleep left for us as we lay in our sleeping-bags. Three days generally see these blizzards out, and we hoped much from Friday, December 8. But when we breakfasted at 10 A.M. (we were getting into day-marching routine) wind and snow were monotonously the same. The temperature rose to +34.3°. These temperatures and those recorded by Meares on his way home must be a record for the interior of the Barrier. So far as we were concerned it did not much matter now whether it was +40° or +34°. Things did look really gloomy that morning.

But at noon there came a gleam of comfort. The wind dropped, and immediately we were out plunging about, always up to our knees in soft downy snow, and often much farther. First we shifted our tents, digging them up with the greatest care that the shovel might not tear them. The valances were encased in solid ice from the water which had run down. Then we started to find our sledges which were about four feet down: they were dragged out, and everything on them was wringing wet. There was a

[1] My own diary.

gleam of sunshine, which soon gave place to snow and gloom, but we started to make experiments in haulage. Four men on ski managed to move a sledge with four others sitting upon it. Nobby was led out, but sank to his belly. As for the drifts I saw Oates standing behind one, and only his head appeared, and this was all loose snow.

"We are all sitting round now after some tea—it is much better than getting into the bags. I can hardly think that the ponies can pull on, but Titus thinks they can pull to-morrow; all the food is finished, and what they have had to-day was only what they would not eat out of their last feed yesterday. It is a terrible end—driven to death on no more food, to be then cut up, poor devils. I have swopped the Little Minister with Silas Wright for Dante's Inferno!"[1] The steady patter of the falling snow upon the tents was depressing as we turned in, but the temperature was below freezing.

The next morning (Saturday, December 9) we turned out to a cloudy snowy day at 5.30 A.M. By 8.30 we had hauled the sledges some way out of the camp and started to lead out the ponies. "The horses could hardly move, sank up to their bellies, and finally lay down. They had to be driven, lashed on. It was a grim business."[2]

My impressions of that day are of groping our way, for Bowers and I were pulling a light sledge ahead to make the track, through a vague white wall. First a confused crowd of men behind us gathered round the leading pony sledge, pushing it forward, the poor beast barely able to struggle out of the holes it made as it plunged forward. The others were induced to follow, and after a start had been made the regular man-hauling party went back to fetch their load. There was not one man there who would willingly have caused pain to a living thing. But what else was to be done—we could not leave our pony depôt in that bog. Hour after hour we plugged on: and we dare not halt for lunch, we knew we could never start again. After crossing many waves huge pressure ridges suddenly

[1] My own diary. [2] *Ibid.*

showed themselves all round, and we got on to a steep rise with the coastal chasm on our right hand appearing as a great dip full of enormous pressure. Scott was naturally worried about crevasses, and though we knew there was a way through, the finding of it in the gloom was most difficult. For two hours we zig-zagged about, getting forward it is true, but much bewildered, and once at any rate almost bogged. Scott joined us, and we took off our ski so as to find the crevasses, and if possible a hard way through. Every step we sank about fifteen inches, and often above our knees. Meanwhile Snatcher was saving the situation in snow-shoes, and led the line of ponies. Snippets nearly fell back into a big crevasse, into which his hind quarters fell: but they managed to unharness him, and scramble him out.

I do not know how long we had been going when Scott decided to follow the chasm. We found a big dip with hard ice underneath, and it was probably here that we made the crossing: we could now see the ring of pressure behind us. Almost it was decided to make the depôt here, but the ponies still plugged on in the most plucky way, though they had to be driven. Scott settled to go as far as they could be induced to march, and they did wonderfully. We had never thought that they would go a mile: but painfully they marched for eleven hours without a long halt, and covered a distance which we then estimated at seven miles. But our sledge-meters were useless being clogged with the soft snow, and we afterwards came to believe the distance was not so great: probably not more than five. When we had reached a point some two miles from the top of the snow divide which fills the Gateway we camped, thankful to rest, but more thankful still that we need drive those weary ponies no more. Their rest was near. It was a horrid business, and the place was known as Shambles Camp.

Oates came up to Scott as he stood in the shadow of Mount Hope. "Well! I congratulate you, Titus," said Wilson. "And *I* thank you, Titus," said Scott.

And that was the end of the Barrier Stage.

CHAPTER X

THE POLAR JOURNEY (*continued*)

The Southern Journey involves the most important object of the Expedition. . . . One cannot affect to be blind to the situation: the scientific public, as well as the more general public, will gauge the result of the scientific work of the Expedition largely in accordance with the success or failure of the main object. With success all roads will be made easy, all work will receive its proper consideration. With failure even the most brilliant work may be neglected and forgotten, at least for a time.—SCOTT.

II. THE BEARDMORE GLACIER

THE ponies had dragged twenty-four weekly units of food for four men to some five miles from the bottom of the glacier, but we were late. For some days we had been eating the Summit ration, that is the food which should not have been touched until the Glacier Depôt had been laid, and we were still a day's run from the place where this was to be done: it was of course the result of the blizzard which no one could have expected in December, usually one of the two most settled months. Still more serious was the deep snow which lay like down upon the surface, and into which we sank commonly to our knees, our sledges digging themselves in until the crosspieces were ploughing through the drift. Shackleton had fine weather, and found blue ice in the bottom reaches of the glacier, and Scott lamented what was unquestionably bad luck.

It was noon of December 10 before we had made the readjustments necessary for man-hauling. We left here pony meat for man and dog food, three ten-foot sledges, one twelve-foot sledge, and a good many oddments of

clothing and pony gear. We started with three four-man teams, each pulling for these first few miles about 500 lbs., as follows: (I) Scott, Wilson, Oates, Seaman Evans: (II) Lieut. Evans, Atkinson, Wright, Lashly: (III) Bowers, Cherry-Garrard, Crean, Keohane. The team numbered (II) had been man-hauling together some days, and two members of it, Lieut. Evans and Lashly, had already been man-hauling since the breakdown of the second motor at Corner Camp; it was certainly not so fit as the other two. In addition to these three sledges the two dog-teams, which had been doing splendid work, were carrying 600 lbs. of our weight as well as the provisions for the Lower Glacier Depôt, weighing 200 lbs. It began to look as if Amundsen had chosen the right form of transport.

The Gateway is a gap in the mountains, a side door, as it were, to the great tumbled glacier. By lunch we were on the top of the divide, but it took six hours of the hardest hauling to cover the mile which formed the rise. As long as possible we stuck to ski, but we reached a point at which we could not move the sledges on ski: once we had taken them off we were up to our knees, and the sledges were ploughing the snow which would not support them. But our gear was drying in the bright sunshine, our bags were spread out at every opportunity, and the great jagged cliffs of red granite were welcome to the eyes after 425 statute miles of snow. The Gateway is filled by a giant snow-drift which has been formed between Mount Hope on our left and the mainland on our right. From Shackleton's book we gathered that the Beardmore was a very bad glacier indeed. Once on the top of the divide we lunched, and we descended in the evening, camping at midnight on the edge of the glacier, which we found, as we had feared, covered with soft snow which was so deep as to give no indication whatever of the hard ice which Shackleton found here. "We camped in considerable drift and a blizzard wind, which is still blowing, and I hope will go on, for every hour it is sweeping away inches of this soft powdery snow into which we have been sinking all day."[1]

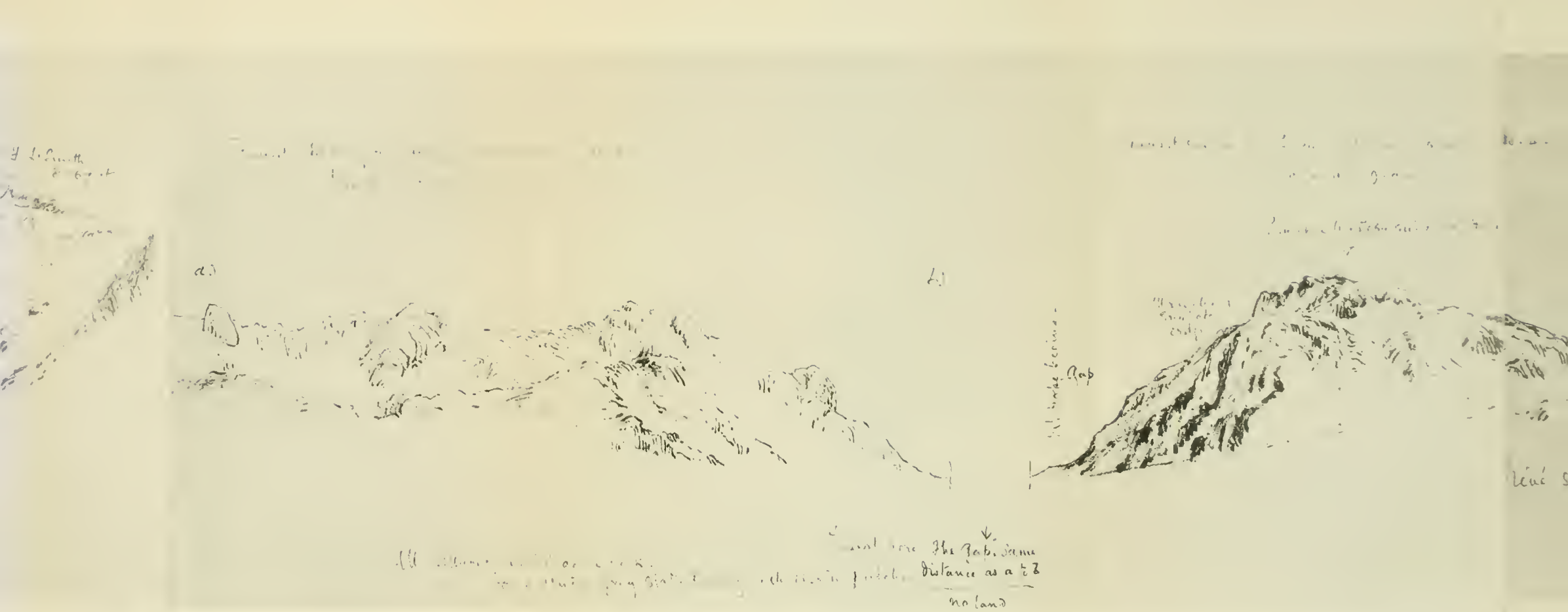
[1] My own diary.

Before setting out on December 11 we rigged up the Lower Glacier Depôt, three weekly Summit units of provisions, two cases of emergency biscuit which was the ration for three weekly units, and two cans of oil. These provisions were calculated to carry the three returning parties as far as the Southern Barrier Depôt. We also left one can of spirit, used for lighting the primus, one bottle of medical brandy and certain spare and personal gear not required. On the sledges themselves we stowed eighteen weekly Summit units, besides the three ready bags containing the ration for the current week, and the complement of biscuit, for this was ten cases in addition to the three boxes of biscuit which the three parties were using. Then there were eighteen cans of oil, with two cans of lighting spirit and a little additional Christmas fare which Bowers had packed. Every unit of food was worked out for four men for one week.

During this time of deep snow the sledge-meters would not work and we were compelled to estimate the distance marched each day. "It has been a tremendous slog, but I think a most hopeful day. Before starting it took us about two hours to make the depôt and then we got straight into the midst of the big pressure. The dogs, with ten cases of biscuit, came behind and pulled very well. We soon caught sight of a big boulder, and Bill and I roped up and went over to it. It was a block of very coarse granite, nearly gneiss, with large crystals of quartz in it, rusty outside and quite pinkish when chipped, and with veins of quartz running through it. It was a vast thing to be carried along on the ice, and looked very typical of the rock round. Instead of keeping under the great cliff where Shackleton made his depôt, we steered for Mount Kyffin, that is towards the middle of the glacier, until lunch, when we had probably done about two or three miles. There was a crevasse wherever we went, but we managed to pull on ski and had no one down, and the deep snow saved the dogs."[1] The dog-teams were certainly running very big risks that morning. They turned

[1] My own diary.

E. A. Wilson, del.


a.)
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Gap
The Gap. Same
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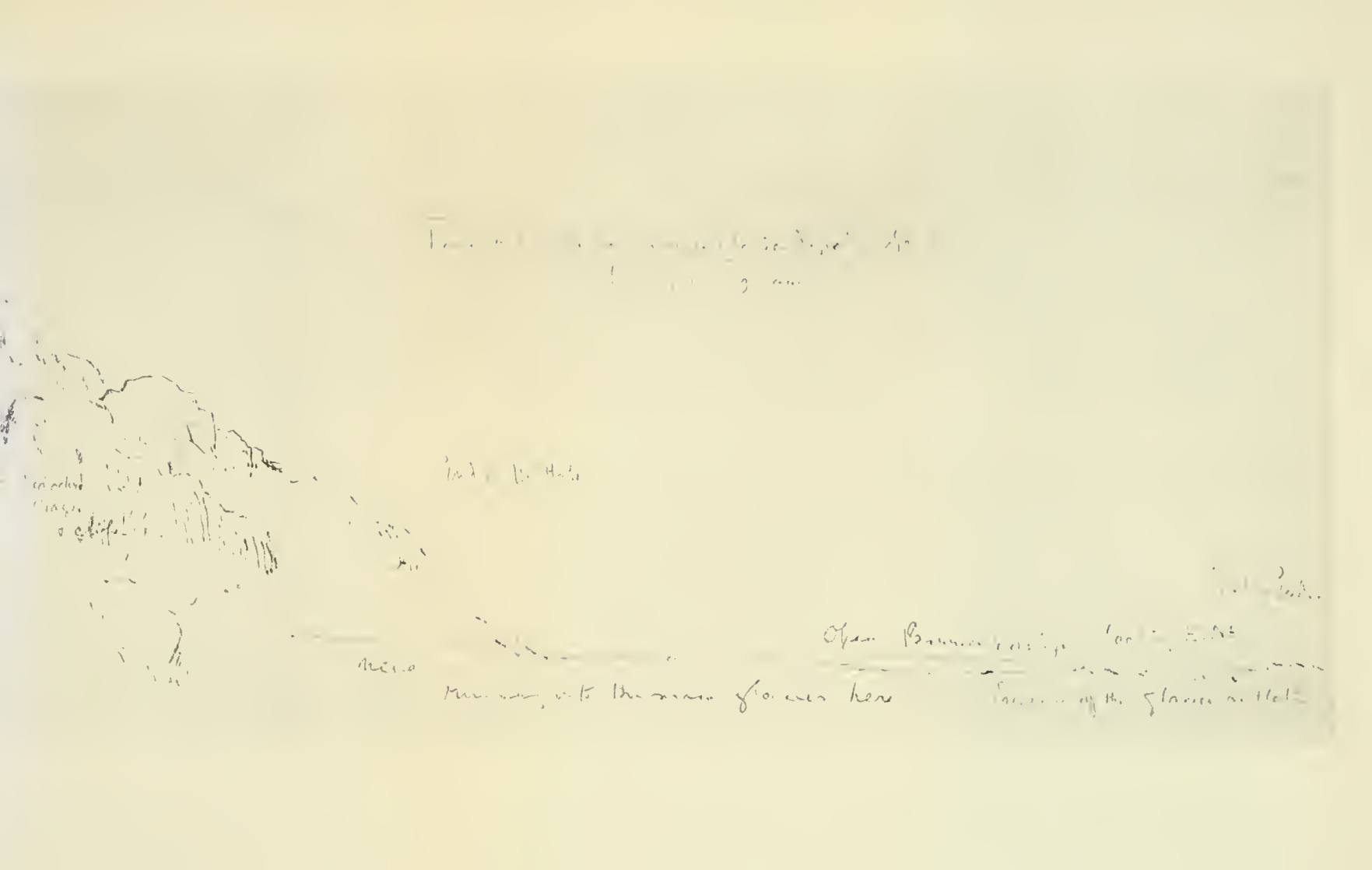


back after lunch, having been brought on far longer than had been originally intended, for, as I have said, they were to have been back at Hut Point before now, and their provision allowance would not allow of further advance. Perhaps we rather overestimated the dogs' capacities when Bowers wrote: "The dogs are wonderfully fit and will rush Meares and Dimitri back like the wind. I expect he will be nearly back by Christmas, as they will do about thirty miles a day." But Meares told us when we got back to the hut that the dogs had by no means had an easy journey home. Now, however, "with a whirl and a rush they were off on the homeward trail. I could not see them (being snow-blind), but heard the familiar orders as the last of our animal transport left us." [1]

Our difficulties during the next four days were increased by the snow-blindness of half the men. The evening we reached the glacier Bowers wrote: "I am afraid I am going to pay dearly for not wearing goggles yesterday when piloting the ponies. My right eye has gone bung, and my left one is pretty dicky. If I am in for a dose of snow glare it will take three or four days to leave me, and I am afraid I am in the ditch this time. It is painful to look at this paper, and my eyes are fairly burning as if some one had thrown sand into them." And then: "I have missed my journal for four days, having been enduring the pains of hell with my eyes as well as doing the most back-breaking work I have ever come up against. . . . I was as blind as a bat, and so was Keohane in my team. Cherry pulled alongside me, with Crean and Keohane behind. By sticking plaster over my glasses except one small central spot I shut off most light and could see the points of my ski, but the glasses were always fogged with perspiration and my eyes kept on streaming water which cannot be wiped off on the march as a ski stick is held in each hand; and so heavy were our weights [we had now taken on the weights which had been on the dog sledges] that if any of the pair slacked a hand even, the sledge stopped. It was all we could do to keep the sledge

[1] Bowers.

moving for short spells of a few hundred yards, the whole concern sinking so deeply into the soft snow as to form a snow-plough. The starting was worse than pulling as it required from ten to fifteen desperate jerks on the harness to move the sledge at all." Many others were also snow-blind, caused partly by the strain of the last march of the ponies, partly by not having realized that now that we were day-marching the sun was more powerful and more precautions should be taken. The cocaine and zinc sulphate tablets which we had were excellent, but we also found that our tea leaves, which had been boiled twice and would otherwise have been thrown away, relieved the pain if tied into some cotton and kept pressed against the eyes. The tannic acid in the tea acted as an astringent. A snow-blind man can see practically nothing anyhow and so he is not much worse off if a handkerchief is tied over his eyes.

"*Beardmore Glacier.* Just a tiny note to be taken back by the dogs. Things are not so rosy as they might be, but we keep our spirits up and say the luck must turn. This is only to tell you that I find I can keep up with the rest as well as of old." [1]

Then for the first time we were left with our full loads of 800 lbs. a sledge. Even Bowers asked Scott whether he was going to try it without relaying. That night Scott's diary runs:

"It was a very anxious business when we started after lunch, about 4.30. Could we pull our full loads or not? My own party got away first, and, to my joy, I found we could make fairly good headway. Every now and again the sledge sank in a soft patch, which brought us up, but we learned to treat such occasions with patience. We got sideways to the sledge and hauled it out, Evans (P.O.) getting out of his ski to get better purchase. The great thing is to keep the sledge moving, and for an hour or more there were dozens of critical moments when it all but stopped, and not a few when it brought up altogether. The latter were very trying and tiring." [2] Altogether it was an encouraging day and we reckoned we had made

[1] Scott.

[2] *Scott's Last Expedition*, vol. i. p. 497.

c'
d'
a'
Scooped
Mock face

seven miles. Generally it was not Scott's team which made the heaviest weather these days but on December 12 they were in greater difficulties than any of us. It was indeed a gruelling day, for the surface was worse than ever and many men were snow-blind. After five hours' work in the morning we were about half a mile forward. We were in a sea of pressure, the waves coming at us from our starboard bow, the distance between the crests not being very great. We could not have advanced at all had it not been for our ski: "on foot one sinks to the knees, and if pulling on a sledge to half way between knee and thigh."[1]

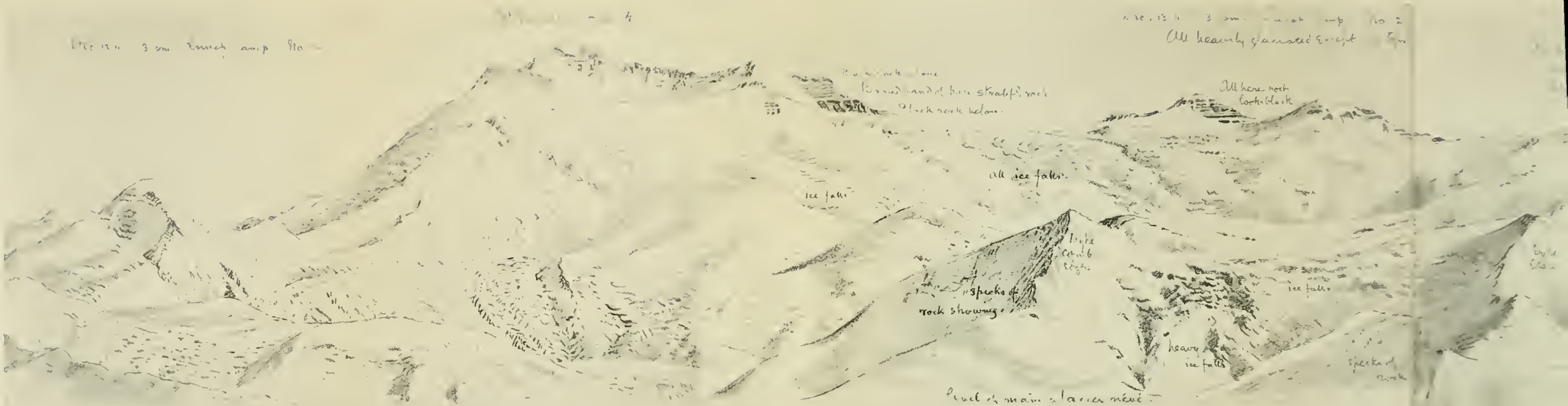
On December 13, "the sledges sank in over twelve inches, and all the gear, as well as the thwartship pieces, were acting as breaks. The tugs and heaves we enjoyed, and the number of times we had to get out of our ski to upright the sledge, were trifles compared with the strenuous exertion of every muscle and nerve to keep the wretched drag from stopping when once under weigh; and then it would stick, and all the starting operations had to be gone through afresh. We did perhaps half a mile in the forenoon. Anticipating a better surface in the afternoon we got a shock. Teddy [Evans] led off half an hour earlier to pilot a way, and Captain Scott tried some fake with his spare runners [he lashed them under the sledge to prevent the cross-pieces ploughing the snow] that involved about an hour's work. We had to continually turn our runners up to scrape the ice off them, for in these temperatures they are liable to get warm and melt the snow on them, and that freezes into knobs of ice which act like sandpaper or spikes on a pair of skates. We bust off second full of hope having done so well in the forenoon, but pride goeth [before a fall]. We stuck ten yards from the camp, and nine hours later found us little more than half a mile on. I have never seen a sledge sink so. I have never pulled so hard, or so nearly crushed my inside into my backbone by the everlasting jerking with all my strength on the canvas band round my unfortunate tummy. We were all in the same boat however.

[1] *Scott's Last Expedition*, vol. i. p. 499.

"I saw Teddy struggling ahead and Scott astern, but we were the worst off as the leading team had topped the rise and I was too blind to pick out a better trail. We fairly played ourselves out that time, and finally had to give it up and relay. Halving the load we went forward about a mile with it, and, leaving that lot, went back for the remainder. So done were my team that we could do little more than pull the half loads. Teddy's team did the same, and though Scott's did not, we camped practically the same time, having gone over our distance three times. Mount Kyffin was still ahead of us to the left: we seemed as if we can never come up with it. To-morrow Scott decided that if we could not move our full loads we would start relaying systematically. It was a most depressing outlook after such a day of strenuous labour." [1] We got soaked with perspiration these days, though generally pulling in vest, pants, and windproof trousers only. Directly we stopped we cooled quickly. Two skuas appeared at lunch, attracted probably by the pony flesh below, but it was a long way from the sea for them to come. On Thursday December 14, Scott wrote: "Indigestion and the soggy condition of my clothes kept me awake for some time last night, and the exceptional exercise gives bad attacks of cramp. Our lips are getting raw and blistered. The eyes of the party are improving, I am glad to say. We are just starting our march with no very hopeful outlook."

But we slogged along with much better results. "Once into the middle of the glacier we had been steering more or less for the Cloudmaker and by supper to-day were well past Mount Kyffin and were about 2000 feet up after an estimated run of 11 or 12 statute miles. But the most cheering sign was that the blue ice was gradually coming nearer the surface; at lunch it was two feet down, and at our supper camp only one foot. In pitching our tent Crean broke into a crevasse which ran about a foot in front of the door and there was another at Scott's door. We threw an empty oil can down and it echoed for a

[1] Bowers.



E. A. Wilson, del

ice falls
ice falls
ice falls
Heavily crevassed
Very heavy ice falls
Socks glacier.

terribly long time."[1] We spent the morning of December 15 crossing a maze of crevasses though they were well bridged; I believe all these lower reaches of the glacier are badly crevassed, but the thick snow and our ski kept us from tumbling in. There was a great deal of competition between the teams which was perhaps unavoidable but probably a pity. This day Bowers' diary records, "Did a splendid bust off on ski, leaving Scott in the lurch, and eventually overhauling the party which had left some time before us. All the morning we kept up a steady, even swing which was quite a pleasure." But the same day Scott wrote, "Evans' is now decidedly the slowest unit, though Bowers' is not much faster. We keep up and overhaul either without difficulty." Bowers' team considered themselves quite good, but both teams were satisfied of their own superiority; as a matter of fact Scott's was the faster, as it should have been for it was certainly the heavier of the two.

"It was a very bad light all day, but after lunch it began to get worse, and by 5 o'clock it was snowing hard and we could see nothing. We went on for nearly an hour, steering by the wind and any glimpse of sastrugi, and then, very reluctantly, Scott camped. It looks better now. The surface is much harder and more wind-swept, and as a rule the ice is only six inches underneath. We are beginning to talk about Christmas. We get very thirsty these days in the warm temperatures: we shall feel it farther up when the cold gets into our open pores and sunburnt hands and cracked lips. I am plastering some skin on mine tonight. Our routine now is: turn out 5.30, lunch 1, and camp at 7, and we get a short 8 hours' sleep, but we are so dead tired we could sleep half into the next day: we get about 9½ hours' march. Tea at lunch a positive godsend. We are raising the land to the south well, and are about 2500 feet up, latitude about 84° 8′ S."[2]

The next day, December 16, Bowers wrote: "We have had a really enjoyable day's march, except the latter end of the afternoon. At the outset in the forenoon my

[1] My own diary. [2] *Ibid.*

sledge was a bit in the lurch, and Scott drew steadily away from us. I knew I could ordinarily hold my own with him, but for the first two hours we dropped till we were several hundred yards astern; try as I would to rally up my team we could gain nothing. On examining the runners however we soon discovered the cause by the presence of a thin film of ice. After that we ran easily. The thing one must avoid doing is to touch them with the hand or mitt, as anything damp will make ice on them. We usually turn the sledge on its side and scrape one runner at a time with the back of our knives so as to avoid any chance of cutting or chipping them. In the afternoon either the tea or the butter we had at lunch made us so strong that we fairly overran the other team." [1]

"We must push on all we can, for we are now 6 days behind Shackleton, all due to that wretched storm. So far, since we got among the disturbances we have not seen such alarming crevasses as I had expected; certainly dogs could have come up as far as this." [2]

"At lunch we could see big pressure ahead having done first over five miles. Soon after lunch, having gone down a bit, we rose among very rough stuff. We plugged on until 4.30, when ski became quite impossible, and we put them on the sledges and started on foot. We immediately began putting legs down: one step would be on blue ice and the next two feet down into snow: very hard going. The pressure ahead seemed to stretch right into a big glacier next the Keltie Glacier to the east, and so we altered course for a small bluff point about two-thirds of the way along the base of the Cloudmaker. We were to camp at 6, but did not do so until about 6.30, the last 1½ hours in big pressure, crossing big and smaller waves, and hundreds of crevasses which one of us generally found. We are now camped in very big pressure, and with difficulty we found a patch big enough to pitch the tent free from crevasses. We are pretty well past the Keltie Glacier which is a vast tumbled mass: there is a long line of ice falls ahead, and I think there is a hard day ahead of us to-

[1] Bowers. [2] *Scott's Last Expedition*, vol. i. p. 506.

E. A Wilson, del.

morrow among that pressure which must be enormous. We can't go farther inshore here, being under the north end of the Cloudmaker, and a fine mountain it is, rising precipitously above us.[1]

"Sunday, December 17. Nearly 11 miles. Temp. 12.5°. 3500 feet. We have had an exciting day—this morning was just like the scenic railway at Earl's Court. We got straight on to the big pressure waves, and headed for the humpy rock at the base of the Cloudmaker. It was a hard plug up the waves, very often standing pulls, and all that we could do for a course was a very varied direction. Going down the other side was the exciting part: all we could do was to set the sledge straight, hang on to the straps, give her a little push and rush down the slope, which was sometimes so sheer that the sledge was in the air. Sometimes there was no chance to brake the sledge, and we all had to get on to the top, and we rushed down with the wind whistling in our ears. After three hours of this it levelled out again a bit, and we took the top of a wave, and ran south along it on blue ice : enormous pressure to our right, largely I think caused by the Keltie Glacier. Then we ascended a rise, snowy and crevassed, and camped after doing just under five miles, with big pressure ahead." [2]

"In the afternoon we had a hard surface. Scott started off at a great speed, Teddy [Evans] and I following. There was something wrong with my team or my sledge, as we had a desperate job to keep up at first. We did keep up all right, but were heartily glad when after about 2½ hours Scott stopped for a spell. I rearranged our harness, putting Cherry and myself on the long span again, which we had temporarily discarded in the morning. We were both winded and felt wronged. The rearrangement was a success however, and the remainder of the march was a pleasure instead of a desperate struggle. It finished up on fields of blue rippled ice with sharp knife edges, and snow patches few and far between. We are all camped on a small snow patch in the middle of a pale blue rippled sea, about

[1] My own diary. [2] *Ibid.*

3600 feet above sea level and past the Cloudmaker, which means that we are half way up the Glacier."[1] We had done 12½ miles (statute).

The Beardmore Glacier is twice as large as the Malaspina in Alaska, which was the largest known glacier until Shackleton discovered the Beardmore. Those who knew the Ferrar Glacier professed to find the Beardmore unattractive, but to me at any rate it was grand. Its very vastness, however, tends to dwarf its surroundings, and great tributary glaciers and tumbled ice-falls, which anywhere else would have aroused admiration, were almost unnoticed in a stream which stretched in places forty miles from bank to bank. It was only when the theodolite was levelled that we realized how vast were the mountains which surrounded us: one of which we reckoned to be well over twenty thousand feet in height, and many of the others must have approached that measurement. Lieutenant Evans and Bowers were surveying whenever the opportunity offered, whilst Wilson sat on the sledge or on his sleeping-bag, and sketched.

Before leaving on the morning of December 18 we bagged off three half-weekly units and made a depôt marked by a red flag on a bamboo which was stuck into a small mound. Unfortunately it began to snow in the night and no bearings were taken until the following morning when only the base of the mountains on the west side was visible. We knew we might have difficulty in picking up this depôt again, and certainly we all did.

"It was thick, with low stratus clouds in the morning, and snow was falling in large crystals. Our socks and finnesko, hung out to dry, were covered with most beautiful feathery crystals. In the warm weather one gets fairly saturated with perspiration on the march, and footgear is always wet, except the outside covering which is as a rule more or less frozen according to existing temperature. On camping at night I shift to night foot-gear as soon as ever the tent is pitched, and generally slip on my windproof blouse, as one cools down like smoke after the

[1] Bowers.

exertion of man-hauling a heavy sledge for hours. At lunch camp one's feet often get pretty cold, but this goes off as soon as some hot tea is got into the system. As a rule, even when snowing, one's socks, etc., will dry if there is a bit of a breeze. They are always frozen stiff in the morning and can best be thawed out by bundling the lot [under one's] jersey during breakfast. They can then be put on tolerably warm even if wet.

"We started off on a hard rippled blue surface like a sea frozen intact while the wind was playing on it. It soon got worse and we had to have one and sometimes two hands back to keep the sledge from skidding. Of course it was easy enough stuff to pull on, but the ground was very uneven, and sledges constantly capsized. It did not improve the runners either. There were few crevasses.

"All day we went on in dull cloudy weather with hardly any land visible, and the glacier to be seen only for a short distance. In the afternoon the clouds lifted somewhat and showed us the Adam Mountains. The surface was better for the sledges but worse for us, as there were countless cracks and small crevasses, into which we constantly trod, barking our shins. As the afternoon sun came round the perspiration fairly streamed down, and it was impossible to keep goggles clear. The surface was so slippery and uneven that it was difficult to keep one's foothold. However we did 12½ miles, and felt that we had really done a good day's work when we camped. It was not clear enough to survey in the evening, so I took the sledge-meter in hand and worked at it half the night to repair Christopher's damage.[1] I ended up by making a fixing of which I was very proud, but did not dare to look at the time, so I don't know how much sleep I missed.

"There is no doubt that Scott knows where to aim for in a glacier, as it was just here that Shackleton had two or three of his worst days' work, in such a maze of crevasses that he said that often a slip meant death for the whole party. He avoids the sides of the glacier and goes nowhere near the snow: he often heads straight for apparent chaos

[1] See p. 332.

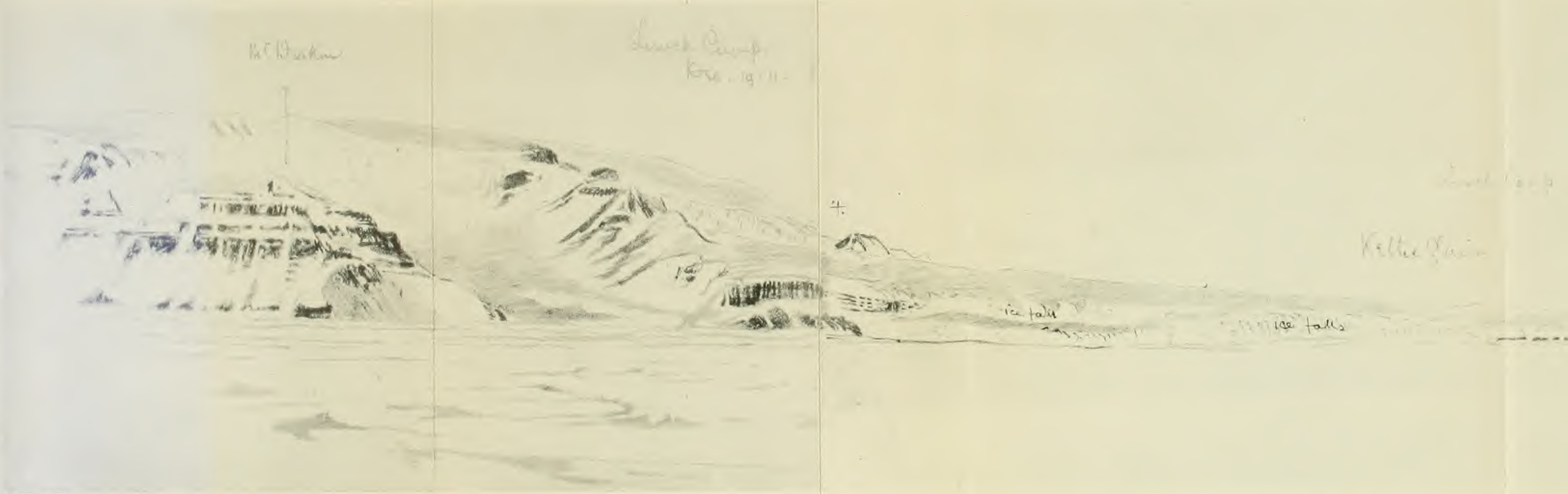
and somehow, when we appear to have reached a cul-de-sac, we find it an open road."[1] However, we all found the trouble on our way back.

"On our right we have now a pretty good view of the Adam, Marshall and Wild Mountains, and their very curious horizontal stratification. Wright has found, amongst bits of wind-blown débris, an undoubted bit of sandstone and a bit of black basalt. We must get to know more of the geology before leaving the glacier finally."[2]

December 19, +7°. Total height 5800 feet. "Things are certainly looking up, seeing that we have risen 1100 feet, and marched 17 to 18 statute miles during the day, whereas Shackleton's last march was 13 statute. It was still thick when we turned out at 5.45, but it soon cleared with a fresh southerly wind, and we could see Buckley Island and the land at the head of the glacier just rising. We started late for Birdie wanted to get our sledge-meter dished up: it has been quite a job to-day getting it on, but it rode well this afternoon. We started over the same crevassed stuff, but soon got on to blue ice, and for two hours had a most pleasant pull, and then up a steepish rise sometimes on blue ice and sometimes on snow. After the pleasantest morning we have had, we completed 8½ miles.

"Angles and observations were taken at lunch, and quite a lot of work was done. There is a general getting squared up with gear, for we know that those going on will not have many more days of warm temperatures. At one time to-day I think Scott meant trying the right hand of the island or nunatak, but as we rose this was obviously impossible, for there is a huge mass of pressure coming down there. From here the Dominion Range also looks as if it were a nunatak. Some of these mountains, which don't look very big, are huge (since the six thousand feet which we have risen have to be added on to them), and many of them are very grand indeed. The Mill Glacier is a vast thing, with big pressure across it. There also seems to be a big series of ice-falls between Buckley

[1] Bowers. [2] *Scott's Last Expedition*, vol. i. p. 509.



E. A. Wilson, del.

Emery Walker Limited Colour

Island and the Dominion Range, for the centre of which Scott is going to-morrow. A pretty hard plug this afternoon, but no disturbance, and gradually we have left the bare ice, and are mostly travelling on *névé*. Much of the ice is white. I have been writing down angles and times for Birdie, and writing this in the intervals. Scott's heel is troubling him again. ['I have bad bruises on knee and thigh'],[1] and generally there has been a run on the medical cases for chafes, and minor ailments. There is now a keen southerly wind blowing. It gets a little colder each day, and we are already beginning to feel it on our sunburnt faces and hands." [2]

Of the crevasses met in the morning Bowers wrote: "So far nobody has dropped down the length of his harness, as I did on the Cape Crozier journey. On this blue ice they are pretty conspicuous, and as they are mostly snow-bridged one is well advised to step over any line of snow. With my short legs this was strenuous work, especially as the weight of the sledge would often stop me with a jerk just before my leading foot quite cleared a crevasse, and the next minute one would be struggling out so as to keep the sledge on the move. It is fatal to stop the sledge as nobody waits for stragglers, and you have to pick up your lost ground by strenuous hurry. Of course some one often gets so far down a hole that it is necessary to stop and help him out."

December 20. "To-day has been a great march—over two miles an hour, and on the whole rising a lot. Soon after starting we got on to the most beautiful icy surface, smooth except for cracks and only patches of snow, most of which we could avoid. We came along at a great rate.

"The most interesting thing to see was that the Mill Glacier is not, as was supposed, a tributary, but probably is an outlet falling from this glacier, and a great size. However it was soon covered up with dense black cloud, and there were billows of cloud behind us and below.

"At lunch Birdie made the disastrous discovery that the registering dial of his sledge-meter was off. A screw

[1] *Scott's Last Expedition*, vol. i. p. 510. [2] My own diary.

had shaken out on the bumpy ice, and the clockwork had fallen off. This is serious for it means that one of the three returning parties will have to go without, and their navigation will be much more difficult. Birdie is very upset, especially after all the trouble he has taken with it, and the hours which he has sat up. After lunch he and Bill walked back near two miles in the tracks, but could not see it. It was then getting very thick, coming over from the north."[1]

"It appeared to be blizzing down the glacier, though clear to the south. The northerly wind drove up a back-draught of snow, and very soon fogged us completely. However we found our way back to camp by the crampon tracks on the blue ice and then packed up to leave."[2]

"We started, making a course to hit the east side of the island where there seems to be the only break in the ice-falls which stretch right across. The weather lifted, and we are now camped with the island just to our right, the long strata of coal showing plainly in it, and just in front of us is this steep bit up through the falls. We have done nearly 23 statute miles to-day, pulling 160 lbs. a man.

"This evening has been rather a shock. As I was getting my finnesko on to the top of my ski beyond the tent Scott came up to me, and said that he was afraid he had rather a blow for me. Of course I knew what he was going to say, but could hardly grasp that I was going back —to-morrow night. The returning party is to be Atch, Silas, Keohane and self.

"Scott was very put about, said he had been thinking a lot about it but had come to the conclusion that the seamen with their special knowledge, would be needed: to rebuild the sledge, I suppose. Wilson told me it was a toss-up whether Titus or I should go on: that being so I think Titus will help him more than I can. I said all I could think of—he seemed so cut up about it, saying 'I think, somehow, it is specially hard on you.' I said I hoped I had not disappointed him, and he caught hold of me and said 'No—no—No,' so if that is the case all is well. He told me that at the bottom of the glacier he was

[1] My own diary. [2] Bowers.

NIGHT CAMP. BUCKLEY ISLAND
December, 20, 1911

hardly expecting to go on himself: I don't know what the trouble is, but his foot is troubling him, and also, I think, indigestion." [1]

Scott just says in his diary, "I dreaded this necessity of choosing—nothing could be more heartrending." And then he goes on to sum up the situation, "I calculated our programme to start from 85° 10′ with 12 units of food and eight men. We ought to be in this position to-morrow night, less one day's food. After all our harassing trouble one cannot but be satisfied with such a prospect." [2]

December 21. Upper Glacier Depôt. "Started off with a nippy S.Wly. wind in our faces, but bright sunshine. One's nose and lips being chapped and much skinned with alternate heat and cold, a breeze in the face is absolute agony until you warm up. This does not take long, however, when pulling a sledge, so after the first quarter of an hour more or less one is comfortable unless the wind is very strong.

"We made towards the only place where it seemed possible to cross the mass of pressure ice caused by the junction of the plateau with the glacier, and congested between the nunatak [Buckley Island] and the Dominion Range. Scott had considered at one time going up to westward of the nunatak, but this appeared more chaotic than the other side. We made for a slope close to the end of the island or nunatak, where Shackleton must have got up also; it is obviously the only place when you look at it from a commanding rise. We did not go quite so close to the land as Shackleton did, and therefore, as had been the case with us all the way up the glacier, found less difficulties than he met with. Scott is quite wonderful in his selections of route, as we have escaped excessive dangers and difficulties all along. In this case we had fairly good going, but got into a perfect mass of crevasses into which we all continually fell; mostly one foot, but often two, and occasionally we went down altogether, some to the length of their harness to be hauled out with the Alpine rope. Most of them could be seen by the strip of snow on

[1] My own diary. [2] *Scott's Last Expedition*, vol. . p. 511-512.

the blue ice. They were often too wide to jump though, and the only thing was to plant your feet on the bridge and try not to tread heavily. As a rule the centre of a bridged crevasse is the safest place, the rotten places are at the edges. We had to go over dozens by hopping right on to the bridge and then over on to the ice. It is a bit of a jar when it gives way under you, but the friendly harness is made to trust one's life to. The Lord only knows how deep these vast chasms go down, they seem to extend into blue black nothingness thousands of feet below.

"Before reaching the rise we had to go up and down many steep slopes, and on the one side the sledges were overrunning us, and on the other it fairly took the juice out of you to reach the top. We saw the stratification on the nunatak which Shackleton supposed to be coal: there was also much sandstone and red granite. I should like to have scratched round these rocks: we may get a chance on our return journey. As we topped each rise we found another one beyond it, and so on.

"About noon some clouds settled in a fog round us, and being fairly in a trough of crevasses we could not get on. Fortunately we found a snow patch to pitch the tents on, but even there were crevasses under us. However, we enjoyed a hearty lunch, and I improved the shining hour by preparing my rations for the Upper Glacier Depôt.

"At 3 P.M. it cleared, and Mount Darwin, a nunatak to the S.W. of the others, could be seen. This we made for, and some two miles on exchanged blue ice for the new snow which was much harder pulling. Scott was fairly wound up, and he went on and on. Every rise topped seemed to fire him with a desire to top the next, and every rise had another beyond and above it. We camped at 8 P.M., all pretty weary, having come up nearly 1500 feet, and done over eleven miles in a S.W. direction. We were south of Mount Darwin in 85° 7′ S., and our corrected altitude proved to be 7000 feet above the Barrier. I worked up till a very late hour getting the depôt stores ready, and also weighing out and arranging allowances for the returning party, and arranging the stores and dis-

tribution of weights of the two parties going on. The temperature was down to zero to-day, the lowest it has been for some time this summer weather." [1]

"There is a very mournful air to-night—those going on and those turning back. Bill came in while I was cooking, to say good-bye. He told me he fully expected to come back with the next party: that he could see Scott was going to take on the strongest fellows, perhaps three seamen. It would be a great disappointment if Bill did not go on." [2]

We gave away any gear which we could spare to those going on, and I find the following in my diary:

"I have been trying to give away my spare gear where it may be most acceptable: finnesko to Birdie, pyjama trousers to Bill, and a bag of baccy for Bill to give Scott on Christmas Day, some baccy to Titus, jaeger socks and half my scarf to Crean, and a bit of handkerchief to Birdie. Very tired to-night."

Scott wrote: "We are struggling on, considering all things against odds. The weather is a constant anxiety, otherwise arrangements are working exactly as planned.

"Here we are practically on the summit and up to date in the provision line. We ought to get through." [3]

[1] Bowers. [2] My own diary. [3] *Scott's Last Expedition*, vol. i. p. 513.

CHAPTER XI

THE POLAR JOURNEY (*continued*)

People, perhaps, still exist who believe that it is of no importance to explore the unknown polar regions. This, of course, shows ignorance. It is hardly necessary to mention here of what scientific importance it is that these regions should be thoroughly explored. The history of the human race is a continual struggle from darkness towards light. It is, therefore, to no purpose to discuss the use of knowledge; man wants to know, and when he ceases to do so, he is no longer man.—NANSEN.

III. THE PLATEAU FROM MOUNT DARWIN TO LAT. 87° 32′ S.

First Sledge	*Second Sledge*
SCOTT	LIEUT. EVANS
WILSON	BOWERS
OATES	LASHLY
SEAMAN EVANS	CREAN

FOR the first week on the plateau Bowers wrote a full diary, which I give below. After December 28 there are little more than fragmentary notes until January 19, the day the party started to return from the Pole. From then until January 25, he wrote fully; nothing after that until January 29, followed by more fragments to "February 3rd (I suppose)." That is the last entry he made.

But this is not surprising, even in a man of Bowers' energy. The time a man can give to writing under such conditions is limited, and Bowers had a great deal of it to do before he could think of a diary—the meteorological log; sights for position as well as rating sights for time; and all the routine work of weights, provisions and depôts.

He wrote no diary at the Pole, but he made a very full meteorological report while there in addition to working out sights. The wonder is that he kept a diary at all.

From Bowers' Diary

December 22. *Midsummer Day.* We have had a brilliant day with a temperature about zero and no wind, altogether charming conditions. I rigged up the Upper Glacier Depôt after breakfast. We depôted two half-weekly units for return of the two parties, also all crampons and glacier gear, such as ice-axes, crowbar, spare Alpine rope, etc., personal gear, medical, and in fact everything we could dispense with. I left my old finnesko, wind trousers and some other spare gear in a bag for going back.

The two advance parties' weights amounted to 190 lbs. per man. They consisted of the permanent weights, twelve weeks' food and oil, spare sledge runners, etc. We said good-bye and sent back messages and photo films with the First Returning Party, which consisted of Atch, Cherry, Silas and Keohane. It was quite touching saying farewell to our good pals—they wished us luck, and Cherry, Atch and Silas quite overwhelmed me.

We went forward, the Owner's team as before consisting of Dr. Bill, Titus and [Seaman] Evans, and [Lieut.] Teddy Evans and Lashly coming over to my sledge and tent to join up with Crean and myself. We all left the depôt cairn marked with two spare 10-feet sledge runners and a large black flag on one. Our morning march was not so long as usual owing to making up the depôt, but we did five miles uphill, hauling our heavier loads more easily than the lighter ones yesterday. A fall in the temperature had improved the surface. We had also sandpapered our runners after the tearing up they had had on the glacier; this made a tremendous difference. The afternoon march brought our total up to 10.6 miles for the day on a S.W. course.

We are steering S.W. with a view to avoiding ice-falls which Shackleton met with. We came across very few crevasses; the few we found were as broad as a street, and

crossing them the whole party, sledge and all, would be on the bridge at once. They only gave way at the edges, and we did nothing worse than put our feet through now and then. The surface is all snow now, névé and hard sastrugi, which seem to point to a strong prevalent S.S.E. wind here.

We are well clear of the land now, and it is a beautiful evening. I have just taken six photographs of the Dominion Range. We can see many new mountains. Our position by observation is 85° 13′ 29″ S., 161° 54′ 45″ E., variation being 175° 45′.

December 23. Turned out at usual time, 5.45 A.M. I am cook this week in our tent. After breakfast built two cairns to mark spot and shoved off at quarter to eight.

We started up a big slope on a S.W. course to avoid the pressure which lay across our track to the southward. It was a pretty useful slog up the rise, at one time it seemed as if we would never top the slope. We stopped for five minutes to look round after 2½ hours' hard plugging and about 1½ hours later reached the top, from which we could see the distant mountains which have so recently been our companions. They are beginning to look pretty magnificent. The top of the great pressure ridge was running roughly S.E. and N.W.: it was one of a succession of ridges which probably cover an area of fifty or sixty square miles. In this neighbourhood Shackleton met them almost to 86½° south. At the top of the ridge were vast crevasses into which we could have dropped the Terra Nova easily. The bridges were firm, however, except at the sides, though we had frequent stumbles into the conservatory roof, so to speak. The sledges were rushed over them without mishap. We had to head farther west to clear disturbances, and at one time were going W.N.W.

At lunch camp we had done 8½ miles, and in the afternoon we completed fifteen on a S.W. course over improved ground. Our routine is to actually haul our sledges for nine hours a day; five in the morning, 7.15 A.M. till 1 P.M.; and four in the afternoon, 2.30 P.M.-6.30 P.M. We turn out at 5.45 A.M. just now. The loads are still pretty heavy, but the surface is remarkably good considering all things.

One gets pretty weary towards the end of the day; all my muscles have had their turn at being [stiffened] up. These hills are giving my back ones a reminder, but they will ache less to-morrow and finally cease to do so, as is the case with legs, etc., which had their turn first.

December 24. *Christmas Eve.* We started off heading due south this morning, as we are many miles to the westward of Shackleton's course and should if anywhere be clear of the ice-falls and pressure. Of course no mortals having been here, one can only conjecture; as a matter of fact, we found later in the day that we were not clear by any means, and had to do a bit of dodging about to avoid disturbances, as well as mount vast ridges with the tops of them a chaos of crevasses. The tops are pretty hard ice-snow, over which the sledges run easily; it is quite a holiday after slogging up the slopes on the softer surface with our heavy loads, which amount to over 190 lbs. per man.

We mark our night camp by two cairns and our lunch camp by single ones. It is doubtful, however, among these ridges, if we will ever pick them up again, and it does not really matter, as we have excellent land for the Upper Glacier Depôt. We completed fourteen miles and turned in as usual pretty tired.

December 25. *Christmas Day.* A strange and strenuous Christmas for me, with plenty of snow to look at and very little else. The breeze that had blown in our faces all yesterday blew more freshly to-day, with surface drift. It fairly nipped one's nose and face starting off—until one got warmed up. We had to pull in wind blouses, as though one's body kept warm enough on the march the arms got numbed with the penetrating wind no matter how vigorously they were swung. Another thing is that one cannot stop the team on the march to get clothes on and off, so it is better to go the whole hog and be too hot than cause delays. We had the addition of a little pony meat for breakfast to celebrate the day. I am the cook of our tent this week.

We steered south again and struck our friends the crevasses and climbed ridges again. About the middle of

the morning we were all falling in continually, but Lashly in my team had the worst drop. He fell to the length of his harness and the trace. I was glad that having noticed his rope rather worn, I had given him a new one a few days before. He jerked Crean and me off our feet backwards, and Crean's harness being jammed under the sledge, which was half across an eight-feet bridge, he could do nothing. I was a little afraid of sledge and all going down, but fortunately the crevasse ran diagonally. We could not see Lashly, for a great overhanging piece of ice was over him. Teddy Evans and I cleared Crean and we all three got Lashly up with the Alpine rope cut into the snow sides which overhung the hole. We then got the sledge into safety.

To-day is Lashly's birthday; he is married and has a family; is 44 years of age, and due for his pension from the service. He is as strong as most and is an undefeated old sportsman. Being a chief stoker, R.N., his original job was charge of one of the ill-fated motor sledges.

[The following is Lashly's own account:

"Christmas Day and a good one. We have done 15 miles over a very changing surface. First of all it was very much crevassed and pretty rotten; we were often in difficulties as to which way we should tackle it. I had the misfortune to drop clean through, but was stopped with a jerk when at the end of my harness. It was not of course a very nice sensation, especially on Christmas Day, and being my birthday as well. While spinning round in space like I was it took me a few seconds to gather together my thoughts and see what kind of a place I was in. It certainly was not a fairy's place. When I had collected myself I heard some one calling from above, 'Are you all right, Lashly?' I was all right it is true, but I did not care to be dangling in the air on a piece of rope, especially when I looked round and saw what kind of a place it was. It seemed about 50 feet deep and 8 feet wide, and 120 feet long. This information I had ample time to gain while dangling there. I could measure the width with my ski sticks, as I had them on my wrists. It seemed a long time before I saw the rope

come down alongside me with a bowline in it for me to put my foot in and get dragged out. It was not a job I should care to have to go through often, as by being in the crevasse I had got cold and a bit frost-bitten on the hands and face, which made it more difficult for me to help myself. Anyhow Mr. Evans, Bowers and Crean hauled me out and Crean wished me many happy returns of the day, and of course I thanked him politely and the others laughed, but all were pleased I was not hurt bar a bit of a shake. It was funny although they called to the other team to stop they did not hear, but went trudging on and did not know until they looked round just in time to see me arrive on top again. They then waited for us to come up with them. The Captain asked if I was all right and could go on again, which I could honestly say 'Yes' to, and at night when we stopped for dinner I felt I could do two dinners in. Anyhow we had a pretty good tuck-in. Dinner consisted of pemmican, biscuits, chocolate éclair, pony meat, plum pudding and crystallized ginger and four caramels each. We none of us could hardly move." [1]]

We had done over eight miles at lunch. I had managed to scrape together from the Barrier rations enough extra food to allow us a stick of chocolate each for lunch, with two spoonfuls of raisins each in our tea. In the afternoon we got clear of crevasses pretty soon, but towards the end of the afternoon Captain Scott got fairly wound up and went on and on. The breeze died down and my breath kept fogging my glasses, and our windproofs got oppressively warm and altogether things were pretty rotten. At last he stopped and we found we had done $14\frac{3}{4}$ miles. He said, "What about fifteen miles for Christmas Day?" so we gladly went on—anything definite is better than indefinite trudging.

We had a great feed which I had kept hidden and out of the official weights since our departure from Winter Quarters. It consisted of a good fat hoosh with pony meat and ground biscuit; a chocolate hoosh made of water, cocoa, sugar, biscuit, raisins, and thickened with a spoonful

[1] Lashly's diary.

of arrowroot. (This is the most satisfying stuff imaginable.) Then came 2½ square inches of plum-duff each, and a good mug of cocoa washed down the whole. In addition to this we had four caramels each and four squares of crystallized ginger. I positively could not eat all mine, and turned in feeling as if I had made a beast of myself. I wrote up my journal—in fact I should have liked somebody to put me to bed.

December 26. We have seen many new ranges of mountains extending to the S.E. of the Dominion Range. They are very distant, however, and must evidently be the top of those bounding the Barrier. They could only be seen from the tops of the ridges as waves up which we are continually mounting. Our height yesterday morning by hypsometer was 8000 feet. That is our last hypsometer record, as I had the misfortune to break the thermometer. The hypsometer was one of my chief delights, and nobody could have been more disgusted than myself at its breaking. However, we have the aneroid to check the height. We are going gradually up and up. As one would expect, a considerable amount of lassitude was felt over breakfast after our feed last night. The last thing on earth I wanted to do was to ship the harness round my poor tummy when we started. As usual a stiff breeze from the south and a temperature of – 7° blew in our faces. Strange to say, however, we don't get frost-bitten. I suppose it is the open-air life.

I could not tell if I had a frost-bite on my face now, as it is all scales, so are my lips and nose. A considerable amount of red hair is endeavouring to cover up matters. We crossed several ridges, and after the effects of overfeeding had worn off did a pretty good march of thirteen miles.

[No more Christmas Days, so no more big hooshes.[1]]

December 27. There is something the matter with our sledge or our team, as we have an awful slog to keep up with the others. I asked Dr. Bill and he said their sledge ran very easily. Ours is nothing but a desperate drag with

[1] Lashly's diary.

constant rallies to keep up. We certainly manage to do so, but I am sure we cannot keep this up for long. We are all pretty well done up to-night after doing 13.3 miles.

Our salvation is on the summits of the ridges, where hard névé and sastrugi obtain, and we skip over this slippery stuff and make up lost ground easily. In soft snow the other team draw steadily ahead, and it is fairly heart-breaking to know you are putting your life out hour after hour while they go along with little apparent effort.

December 28. The last few days have been absolutely cloudless, with unbroken sunshine for twenty-four hours. It sounds very nice, but the temperature never comes above zero and what Shackleton called "the pitiless increasing wind" of the great plateau continues to blow at all times from the south. It never ceases, and all night it whistles round the tents, all day it blows in our faces. Sometimes it is S.S.E., or S.E. to S., and sometimes even S. to W., but always southerly, chiefly accompanied by low drift which at night forms quite a deposit round the sledges. We expected this wind, so we must not growl at getting it. It will be great fun sailing the sledges back before it. As far as weather is concerned we have had remarkably fine days up here on this limitless snow plain. I should like to know what there is beneath us—mountains and valleys simply levelled off to the top with ice? We constantly come across disturbances which I can only imagine are caused by the peaks of ice-covered mountains, and no doubt some of the ice-falls and crevasses are accountable to the same source. Our coming west has not cleared them, as we have seen more disturbances to the west, many miles away. However, they are getting less and less, and are now nothing but featureless rises with apparently no crevasses. Our first two hours' pulling to-day. . . .

From Lashly's Diary

December 29, 1911. A nasty head wind all day and low drift which accumulates in patches and makes it the deuce of a job to get along. We have got to put in long days to do the distance.

December 30, 1911. Sledges going heavy, surface and wind the same as yesterday. We depôted our ski to-night, that is the party returning *to-morrow*, when we march in the forenoon and camp to change our sledge runners into 10 feet. Done 11 miles but a bit stiff.

December 31, 1911. After doing 7 miles we camped and done the sledges which took us until 11 P.M., and we had to dig out to get them done by then, made a depôt and saw the old year out and the new year in. We all wondered where we should be next New Year. It was so still and quiet; the weather was dull and overcast all night, in fact we have not seen much of the sun lately; it would be so nice if we could sometimes get a glimpse of it, the sun is always cheering.

January 1912. *New Year's Day.* We pushed on as usual, but were rather late getting away, 9.10—something unusual for us to be as late. The temperature and wind is still very troublesome. We are now ahead of Shackleton's dates and have passed the 87th parallel, so it is only 180 miles to the Pole.

January 2, 1912. The dragging is still very heavy and we seem to be always climbing higher. We are now over 10,000 feet above sea level. It makes it bad as we don't get enough heat in our food and the tea is not strong enough to run out of the pot. Everything gets cold so quickly, the water boils at about 196° F.

Scott's own diary of this first fortnight on the plateau shows the immense shove of the man: he was getting every inch out of the miles, every ounce out of his companions. Also he was in a hurry, he always was. That blizzard which had delayed him just before the Gateway, and the resulting surfaces which had delayed him in the lower reaches of the glacier! One can feel the averages running through his brain: so many miles to-day: so many more to-morrow. When shall we come to an end of this pressure? Can we go straight or must we go more west? And then the great undulating waves with troughs eight miles wide, and the buried mountains, causing whirlpools in the ice—how

immense, and how annoying. The monotonous march: the necessity to keep the mind concentrated to steer amongst disturbances: the relief of a steady plod when the disturbances cease for a time: then more pressure and more crevasses. Always slog on, slog on. Always a fraction of a mile more. . . . On December 30 he writes, "We have caught up Shackleton's dates." [1]

They made wonderful marches, averaging nearly fifteen statute miles (13 geog.) a day for the whole-day marches until the Second Return Party turned back on January 4. Scott writes on December 26, "It seems astonishing to be disappointed with a march of 15 (statute) miles when I had contemplated doing little more than 10 with full loads." [2]

The Last Returning Party came back with the news that Scott must reach the Pole with the greatest ease. This seemed almost a certainty: and yet it was, as we know now, a false impression. Scott's plans were based on Shackleton's averages over the same country. The blizzard came and put him badly behind: but despite this he caught Shackleton up. No doubt the general idea then was that Scott was going to have a much easier time than he had expected. We certainly did not realize then, and I do not think Scott himself had any notion of, the price which had been paid.

Of the three teams of four men each which started from the bottom of the Beardmore, Scott's team was a very long way the strongest: it was the team which, with one addition, went to the Pole. Lieutenant Evans' team had mostly done a lot of man-hauling already: it was hungry and I think a bit stale. Bowers' team was fresh and managed to keep up for the most part, but it was very done at the end of the day. Scott's own team went along with comparative ease. From the top of the glacier two teams went on during the last fortnight of which we have been speaking. The first of them was Scott's unit complete, just as it had pulled up the glacier. The second team consisted, I believe, of the men whom Scott considered to be the strongest; two from Evans' team, and two from Bowers'. All Scott's team were

[1] *Scott's Last Expedition*, vol. i. p. 525. [2] *Ibid.* p. 521.

fresh to the extent that they had done no man-hauling until we started up the glacier. But two of the other team, Lieutenant Evans and Lashly, had been man-hauling since the breakdown of the second motor on November 1. They had man-hauled four hundred statute miles farther than the rest. Indeed Lashly's man-hauling journey from Corner Camp to beyond 87° 32′ S., and back, is one of the great feats of polar travelling.

Surely and not very slowly, Scott's team began to wear down the other team. They were going easily when the others were making heavy weather and were sometimes far behind. During the fortnight they rose, according to the corrected observations, from 7151 feet (Upper Glacier Depôt) to 9392 feet above sea level (Three Degree Depôt). The rarefied air of the Plateau with its cold winds and lower temperatures, just now about − 10° to − 12° at night and − 3° during the day, were having their effect on the second team, as well as the forced marches. This is quite clear from Scott's diary, and from the other diaries also. What did not appear until after the Last Returning Party had turned homewards was that the first team was getting worn out too. This team which had gone so strong up the glacier, which had done those amazingly good marches on the plateau, broke up unexpectedly and in some respects rapidly from the 88th parallel onwards.

Seaman Evans was the first man to crack. He was the heaviest, largest, most muscular man we had, and that was probably one of the main reasons: for his allowance of food was the same as the others. But one mishap which contributed to his collapse seems to have happened during this first fortnight on the plateau. On December 31 the 12-feet sledges were turned into 10-feet ones by stripping off the old scratched runners which had come up the glacier and shipping new 10-feet ones which had been brought for the purpose. This job was done by the seamen, and Evans appears to have had some accident to his hand, which is mentioned several times afterwards.

Meanwhile Scott had to decide whom he was going to take on with him to the Pole,—for it was becoming clear

that in all probability he *would* reach the Pole: "What castles one builds now hopefully that the Pole is ours," he wrote the day after the supporting party left him. The final advance to the Pole was, according to plan, to have been made by four men. We were organized in four-man units: our rations were made up for four men for a week: our tents held four men: our cookers held four mugs, four pannikins and four spoons. Four days before the Supporting Party turned, Scott ordered the second sledge of four men to depôt their ski. It is clear, I suppose, that at this time he meant the Polar Party to consist of four men. I think there can be no doubt that he meant one of those men to be himself: "for your own ear also, I am exceedingly fit and can go with the best of them," he wrote from the top of the glacier.[1]

He changed his mind and went forward a party of five: Scott, Wilson, Bowers, Oates and Seaman Evans. I am sure he wished to take as many men as possible to the Pole. He sent three men back: Lieutenant Evans in charge, and two seamen, Lashly and Crean. It is the vivid story of those three men, who turned on January 4 in latitude 87° 32′, which is told by Lashly in the next chapter. Scott wrote home: "A last note from a hopeful position. I think it's going to be all right. We have a fine party going forward and arrangements are all going well."[2]

Ten months afterwards we found their bodies.

[1] *Scott's Last Expedition*, vol. i. p. 513. [2] *Ibid.* p. 529.

CHAPTER XII

THE POLAR JOURNEY (*continued*)

THE DEVIL. And these are the creatures in whom you discover what you call a Life Force!

DON JUAN. Yes; for now comes the most surprising part of the whole business.

THE STATUE. What's that?

DON JUAN. Why, that you can make any of these cowards brave by simply putting an idea into his head.

THE STATUE. Stuff! As an old soldier I admit the cowardice: it's as universal as sea sickness, and matters just as little. But that about putting an idea into a man's head is stuff and nonsense. In a battle all you need to make you fight is a little hot blood and the knowledge that it's more dangerous to lose than to win.

DON JUAN. That is perhaps why battles are so useless. But men never really overcome fear until they imagine they are fighting to further a universal purpose—fighting for an idea, as they call it.

BERNARD SHAW, *Man and Superman*.

IV. Returning Parties

Two Dog Teams (Meares and Dimitri) turned back from the bottom of the Beardmore Glacier on December 11, 1911. They reached Hut Point on January 4, 1912.

First Supporting Party (Atkinson, Cherry-Garrard, Wright, Keohane) turned back in lat. 85° 15′ on December 22, 1911. They reached Hut Point January 26, 1912.

Last Supporting Party (Lieut. Evans, Lashly, Crean) turned back in lat. 87° 32′ on January 4, 1912. They reached Hut Point February 22, 1912.

Of the three teams which started up the Beardmore Glacier the first to return, a fortnight after starting the Summit Rations, was known as the First Supporting

Party: the second to return, a month after starting the Summit Rations, was known as the Last Supporting Party. Of the two dog-teams under Meares, which had already turned homewards at the bottom of the glacier after having been brought forward farther than had been intended, I will speak later.[1]

I am going to say very little about the First Return Party, which consisted of Atkinson, Wright, Keohane and myself. Atkinson was in command, and before we left Scott told him to bring the dog-teams out to meet the Polar Party if, as seemed likely, Meares returned home. Atkinson is a naval surgeon and you will find this party referred to in Lashly's diary as "the Doctor's."

"It was a sad job saying good-bye. It was thick, snowing and drifting clouds when we started back after making the depôt, and the last we saw of them as we swung the sledge north was a black dot just disappearing over the next ridge and a big white pressure wave ahead of them. . . . Scott said some nice things when we said good-bye. Anyway he has only to average seven miles a day to get to the Pole on full rations—it's practically a cert for him. I do hope he takes Bill and Birdie. The view over the ice-falls and pressure by the Mill Glacier from the top of the ice-falls is one of the finest things I have ever seen. Atch is doing us proud."[2]

No five hundred mile journey down the Beardmore and across the Barrier can be uneventful, even in midsummer. We had the same dreary drag, the same thick weather, fears and anxieties which other parties have had. A touch of the same dysentery and sickness: the same tumbles and crevasses: the same Christmas comforts, a layer of plum pudding at the bottom of our cocoa, and some rocks collected from a moraine under the Cloudmaker: the same groping for tracks: the same cairns lost and found, the same snow-blindness and weariness, nightmares, food dreams. . . . Why repeat? Comparatively speaking it was a very little journey: and yet the distance from Cape Evans

[1] See pp. 382, 383, 410, 412.
[2] My own diary, December 22, 1911.

to the top of the Beardmore Glacier and back is 1164 statute miles. Scott's Southern Journey of 1902-3 was 950 statute miles.

One day only is worth recalling. We got into the same big pressure above the Cloudmaker which both the other parties experienced. But where the other two parties made east to get out of it, we went west at Wright's suggestion: west was right. The day really lives in my memory because of the troubles of Keohane. He fell into crevasses to the full length of his harness eight times in twenty-five minutes. Little wonder he looked a bit dazed. And Atkinson went down into one chasm head foremost: the worst crevasse fall I've ever seen. But luckily the shoulder straps of his harness stood the strain and we pulled him up little the worse.

All three parties off the plateau owed a good deal to Meares, who, on his return with the two dog-teams, built up the cairns which had been obliterated by the big blizzard of December 5-8. The ponies' walls were drifted level with the surface, and Meares himself had an anxious time finding his way home. The dog tracks also helped us a good deal: the dogs were sinking deeply and making heavy weather of it.

At the Barrier Depôts we found rather despondent notes from Meares about his progress. To the Southern Barrier Depôt he had uncomfortably high temperatures and a very soft surface, and found the cairns drifted up and hard to see. At the Middle Barrier Depôt we found a note from him dated December 20. "Thick weather and blizzards had delayed him, and once he had got right off the tracks and had been out from his camp hunting for them. They were quite well: a little eye strain from searching for cairns. He was taking a little butter from each bag [of the three depôted weekly units], and with this would have enough to the next depôt on short rations."[1] At the Upper Glacier Depôt [Mount Hooper] the news from Meares was dated Christmas Eve, in the evening: "The dogs were going slowly but steadily in very soft stuff, especially his

[1] My own diary.

ADAMS MOUNTAINS

Cherry-Garrard, Keohane, Atkinson

FIRST RETURN PARTY

last two days. He was running short of food, having only biscuit crumbs, tea, some cornflour, and half a cup of pemmican. He was therefore taking fifty biscuits, and a day's provisions for two men from each of our units. He had killed one American dog some camps back: if he killed more he was going to kill Krisravitza who he said was the fattest and laziest. We shall take on thirty biscuits short."[1] Meares was to have turned homewards with the two dog-teams in lat. 81° 15′. Scott took him on to approximately 83° 35′. The dogs had the ponies on which to feed: to make up the deficiency of man-food we went one biscuit a day short when going up the Beardmore: but the dogs went back slower than was estimated and his provisions were insufficient. It was evident that the dog-teams would arrive too late and be too done to take out the food which had still to be sledged to One Ton for the three parties returning from the plateau. It was uncertain whether a man-hauling party with such of this food as they could drag would arrive at the depôt before us.[2] We might have to travel the 130 geographical miles from One Ton to Hut Point on the little food which was already at that depôt and we were saving food by going on short rations to meet this contingency if it arose. Judge therefore our joy when we reached One Ton in the evening of January 15 to find three of the five XS rations which were necessary for the three parties. A man-hauling party consisting of Day, Nelson, Hooper and Clissold had brought out this food; they left a note saying the crevasses near Corner Camp were bad and open. Day and Hooper had reached Cape Evans from the Barrier[3] on December 21: they started out again on this depôt-laying trip on December 26.

It is a common experience for men who have been hungry to be ill after reaching plenty of food. Atkinson was not at all well during our journey in to Hut Point, which we reached without difficulty on January 26.

When I was looking for data concerning the return of the Last Supporting Party of which no account has been published, I wrote to Lashly and asked him to meet and

[1] My own diary. [2] See p. 412. [3] See p. 335.

tell me all he could remember. He was very willing, and added that somewhere or other he had a diary which he had written : perhaps it might be of use ? I asked him to send it me, and was sent some dirty thumbed sheets of paper. And this is what I read :

3rd January 1912.

Very heavy going to-day. This will be our last night together, as we are to return to-morrow after going on in the forenoon with the party chosen for the Pole, that is Capt. Scott, Dr. Wilson, Capt. Oates, Lieut. Bowers and Taff Evans. The Captain said he was satisfied we were all in good condition, fit to do the journey, but only so many could go on, so it was his wish Mr. Evans, Crean and myself should return. He was quite aware we should have a very stiff job, but we told him we did not mind that, providing he thought they could reach the Pole with the assistance we had been able to give them. The first time I have heard we were having mules coming down to assist us next year. I was offering to remain at Hut Point, to be there if any help was needed, but the Captain said it was his and also Capt. Oates' wish if the mules arrived I was to take charge of and look after them until their return ; but if they did not arrive there was no reason why I should not come to Hut Point and wait their return. We had a long talk with the owner [Scott] in our tent about things in general and he seemed pretty confident of success. He seemed a bit afraid of us getting hung up, but as he said we had a splendid navigator, who he was sure he could trust to pull us through. He also thanked us all heartily for the way we had assisted in the Journey and he should be sorry when we parted. We are of course taking the mail, but what a time before we get back to send it. We are nearly as far as Shackleton was on his Journey. I shall not write more to-night, it is too cold.

4th January 1912.

We accompanied the Pole party for about five miles and everything seemed to be going pretty well and Capt. Scott said they felt confident they could pull the load quite

well, so there was no more need for us to go on farther ; so we stopped and did all the talking we could in a short time. We wished them every success and a safe return, and asked each one if there was anything we could do for them when we got back, but they were all satisfied they had left nothing undone, so the time came for the last handshake and good-bye. I think we all felt it very much. They then wished us a speedy return and safe, and then they moved off. We gave them three cheers, and watched them for a while until we began to feel cold. Then we turned and started for home. We soon lost sight of each other. We travelled a long time so as to make the best of it while the weather was suitable, as we have to keep up a good pace on the food allowance. It wont do to lay up much. One thing since we left Mt. Darwin, we have had weather we could travel in, although we have not seen the sun much of late. We did 13 miles as near as we can guess by the cairns we have passed. We have not got a sledge meter so shall have to go by guess all the way home.

[Owing to the loss of a sledge meter on the Beardmore Glacier one of the three parties had to return without one. A sledge meter gives the navigator his dead reckoning, indicating the miles travelled, like the log of a ship. To be deprived of it in a wilderness of snow without landmarks adds enormously to the difficulties and anxieties of a sledge party.]

5th January 1912.

We were up and off this morning, the weather being fine but the surface is about the same, the temperature keeps low. We have got to change our pulling billets. Crean has become snow-blind to-day through being leader, so I shall have the job to-morrow, as Mr. Evans seems to get blind rather quickly, so if I lead and he directs me from behind we ought to get along pretty well. I hope my eyes will keep alright. We made good 17 miles and camped.

6th January 1912.

We are making good progress on the surface we have to contend with. We picked up the 3 Degree Depôt soon

after noon, which puts us up to time. We took our provision for a week. We have got to reach Mt. Darwin Depôt, a distance of 120 miles, with 7 days' provisions. We picked up our ski and camped for the night. We have been wondering if the others have got the same wind as us. If so it is right in their face, whereas it is at our back, a treat to what it is facing it. Crean's eyes are pretty bad to-night. Snow-blindness is an awful complaint, and no one I can assure you looks forward with pleasure when it begins to attack.

7th January 1912.

We have had a very good day as far as travelling goes, the wind has been behind us and is a great help to us. We have been on ski all day for the first time. It seems a good change to footing it, the one thing day after day gets on one's nerves. Crean's eyes are a bit better to-day, but far from being well. The temperature is pretty low, which dont improve the surface for hauling, but we seem to be getting along pretty well. We have no sledge meter so we have to go by guess. Mr. Evans says we done 17½ miles, but I say 16½. I am not going to over-estimate our day's run, as I am taking charge of the biscuits so that we dont over-step the mark. This we have all agreed to so that we should exactly know how we stand, from day to day. I am still leading, not very nice as the light is bad. We caught a glimpse of the land to the east of us, but could only have been a mirage.

8th January 1912.

On turning out this morning we found it was blowing a bliz. so it was almost a case of having to remain in camp, but on second thoughts we thought it best to kick off as we cant afford to lay up on account of food, so thought it best to push on. I wonder if the Pole Party have experienced this. If so they could not travel as it would be in their face, where we have got it at our back. We have lost the outward bound track, so have decided to make a straight line to Mt. Darwin, which will be on Shackleton's course according to his and Wild's Diary.

[Each of the three parties which went forward up the Beardmore Glacier carried extracts from the above diaries. Wild was Shackleton's right-hand man in his Southern Journey in 1908.]

9th January 1912.

Travelling is very difficult, bad light and still blizzing; it would have been impossible to keep in touch with the cairns in this weather. I am giving 12 miles to-night. The weather have moderated a bit and looks a bit more promising. Can see land at times.

10th January 1912.

The light is still very bad, with a good deal of drift, but we must push on as we are a long way from our depôt, but we hope to reach it before our provisions run out. I am keeping a good eye on them. Crean's eyes have got alright again now.

11th January 1912.

Things are a bit better to-day. Could see the land alright and where to steer for. It is so nice to have something to look at, but I am thinking we shall all have our work cut out to reach the depôt before our provisions run short. I am deducting a small portion each meal so that we shall not have to go without altogether if we don't bring up at the proper time. Have done about 14 miles.

12th January 1912.

The day has been full of adventure. At first we got into some very rough stuff, with plenty of crevasses. Had to get rid of the ski and put our thinking cap on, as we had not got under way long before we were at the top of some ice-falls; these probably are what Shackleton spoke of. We could see it meant a descent of 600/700 feet, or make a big circuit, which meant a lot of time and a big delay, and this we cant afford just now, so we decided on the descent into the valley. This proved a difficult task, as we had no crampons, having left them at Mt. Darwin Depôt; but we managed after a time by getting hold of the sledge each side and allowing her to run into a big lump of pressure

which was we knew a risky thing to do. It took us up to lunch time to reach the valley, where we camped for lunch, where we all felt greatly relieved, having accomplished the thing safely, no damage to ourselves or the sledge, but we lost one of Crean's ski sticks. Some of the crevasses we crossed were 100 to 200 feet wide, but well bridged in the centre, but the edges were very dangerous indeed. This is where the snow and ice begins to roll down the glacier. After starting on our way again we found we had to climb the hill. Things dont look very nice ahead again to-night. We dont seem to be more than a day's run from the depôt, but it will surprise me if we reach it by to-morrow night; if not we shall have to go on short rations, as our supply is nearly run out, and we have not lost any time, but we knew on starting we had to average 15½ miles per day to reach it in time.

13th January 1912.

This has been a very bad day for us, what with ice-falls and crevasses. We feel all full up to-night. The strain is tremendous some days. We are camped, but not at the depôt, but we hope to pick it up some time to-morrow. We shall be glad to get off the Summit, as the temperature is very low. We expected the party would have reached the Pole yesterday, providing they had anything of luck.

[Scott reached the Pole on January 17.]

14th January 1912.

Sunday, we reached the Mt. Darwin Depôt at 2 P.M. and camped for lunch. We had just enough now for our meal; this is cutting it a bit fine. We have now taken our 3½ days' allowance, which has got to take us another 57 miles to the Cloudmaker Depôt. This we shall do if we all keep as fit as we seem just now. We left a note at the depôt to inform the Captain of our safe arrival, wishing them the best of a journey home. We are quite cheerful here to-night, after having put things right at the depôt, where we found the sugar exposed to the sun; it had commenced to melt, but we put everything alright before we left, and picked up

our crampons and got away as soon as we could. We know there is not much time to spare. We are now beginning to descend rapidly. To-night it is quite warm, and our tea and food is warmer. Things are going pretty favourable. We are looking forward to making good runs down the glacier. We have had some very heavy dragging lately [up] the sharp rises we found on the outward journey. After a sharp rise we found a long gradual run down, two and three miles in length. We noticed this on our outward journey and remarked on it, but coming back the long up-hill drag we found out was pretty heavy work.

15th January 1912.

Had a good run to-day but the ice was very rough and very much crevassed, but with crampons on we made splendid progress. We did not like to stop, but we thought it would not be advisable to overdo our strength as it is a long way to go yet.

16th January 1912.

We made good headway again to-day, but to-night we camped in some very rough ice and pressure ridges. We are under the impression we are slightly out of our proper course, but Mr. Evans thinks we cant be very far out either way, and Crean and I are of the same opinion according to the marks on the land. Anyhow we hope to get out of it in the morning and make the Cloudmaker Depôt by night. We shall then feel safe, but the weather dont look over promising again to-night, I am thinking. So far we have not had to stop for weather. We have wondered if the Pole Party have been as lucky with the weather as we have. They ought by now to be homeward bound. We have more chance now of writing as the temperature is much better down here. To-night we have been discussing how the dogs got home, and also the progress made by the Doctor's [Atkinson] Party. They ought to be nearing home. We have thought of the time it will take us to reach it at the rate we are getting along now.

17th January 1912.

We have to-day experienced what we none of us ever wants to be our lot again. I cannot describe the maze we got into and the hairbreadth escapes we have had to pass through to-day. This day we shall remember all our lives. The more we tried to get clear the worse the pressure got; at times it seemed almost impossible for us to get along, and when we had got over the places it was more than we could face to try and retreat; so we struggled on for hours to try and free ourselves, but everything seemed against us. I was leading with a long trace so that I could get across some of the ridges when we thought it possible to get the sledge over without being dashed down into the fathomless pits each side of us which were too numerous to think of. Often and often we saw openings where it was possible to drop the biggest ship afloat in and loose her. This is what we have travelled over all day. It has been a great strain on us all, and Mr. Evans is rather down and thinks he has led us into such a hole, but as we have told him it is no fault of his, as it is impossible for anyone coming down the glacier to see what is ahead of them, so we must be thankful that we are so far safe. To-night we seem to be in a better place. We have camped not being able to reach the depôt, which we are certain is not far off. Dont want many days like this.

18th January 1912.

We started off all in good spirits trusting we should be able to reach the depôt all in good time, but we had not got far before we came into pressure far worse than we were in yesterday. My God ! what a day this have been for us all. I cannot describe what we really have to-day come through, no one could believe that we came through with safety, if we had only had a camera we could have obtained some photographs that would have surprised anyone living. We travelled all day with very little food, as we are a day and a half overdue, but when we got clear, I can say "clear" now because I am dotting down this at the depôt where we have arrived. I had managed to keep behind just a small amount of biscuit and a drop of tea to liven us up to

BELOW THE CLOUDMAKER

try and reach the depôt, which we reached at 11 P.M. after one of the most trying days of my life. Shall have reason to never forget the 17 and 18 of January, 1912. To-night Mr. Evans is complaining of his eyes, more trouble ahead!

19th January 1912.

After putting the depôt in order and re-arranging things, we kicked off again for D. [Lower Glacier] Depôt. Mr. Evans' eyes were very bad on starting this morning, but we made a pretty good start. I picked some rock to-day which I intend to try and get back with, as it is the only chance we have had of getting any up to the present, and it seemed a funny thing: the rock I got some pieces of looked as if someone before me had been chipping some off. I wonder if it was the Doctor's party, but we could not see any trace of their sledge, but we could account for that, as it was all blue ice and not likely to leave any marks behind. After travelling for some distance we got on the same ridge as we ran along on the outward Journey and passed what we took to be the Doctor's Xmas Camp. We had not gone far past before we got into soft snow, so we decided to camp for lunch. Mr. Evans' eyes being very bad indeed, we are travelling now on our own, I am leading and telling him the course I am steering, that is the different marks on the mountains, but we shall keep on this ridge for some distance yet. After lunch to-day we did not proceed far before we decided to camp, the surface being so bad and Mr. Evans' eyes so bad, we thought it would do us all good to have a rest. Last night we left a note for Capt. Scott, but did not say much about our difficulties just above the Cloudmaker, as it would be better to tell him when we see him.

20th January 1912.

We did not get away very smart to-day, but as we found the surface very soft, we decided to go on ski. Mr. Evans is still suffering with his eyes and badly, after getting his ski on we tied him on to the trace so that he could help to drag a bit, when we were troubling about the ridges we came over on our outward Journey, but strange

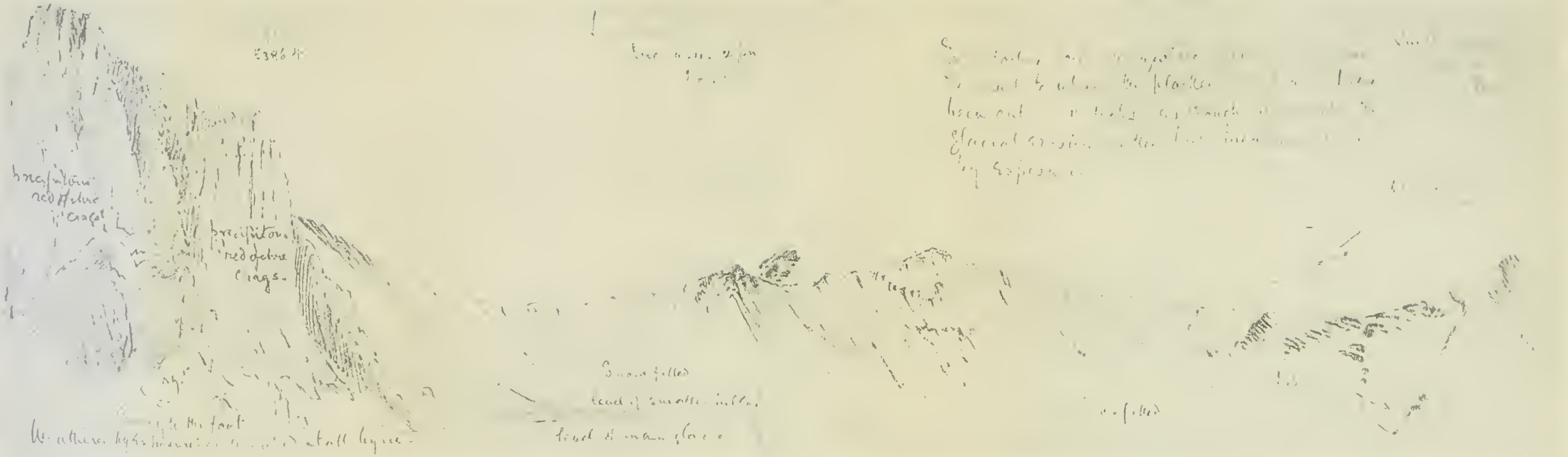
to say we never encountered any ridges at all and the surface, although very soft, was the best I have ever sledged over ever since I have been at it. We fancied on our left or to the west we saw what we took to be the ridges what we seem to have missed altogether, although Mr. Evans have been blind and could not see anything at all we have made splendid progress and covered at least 20 miles, as near as we can guess. We passed to-day one of the Doctor's homeward bound camps, and kept on their track for some time, but finally lost it. We are camped to-night and we all feel confident we shall, if the weather remains good, reach the depôt to-morrow night.

21st January 1912.

Sunday : We started off as usual, again on ski, the weather again being favourable. Mr. Evans' eyes is still bad, but improving. It will be a good job when they are better. I picked up our outward bound course soon after we started this morning and asked Mr. Evans if I should try and keep it, as it will save him the trouble of directing me, and another thing we came out without going through any crevasses and I have noticed a good many crevasses to-day what seems to be very dangerous ones, and on two occasions where our sledges [on the outward journey] had gone over, two of the crevasses had fallen through. We accomplished the journey from the Cloudmaker to this depôt in three days. We all feel quite proud of our performance. Mr. Evans is a lot better to-night and old Tom is giving us a song while he is covering up the tent with snow. We have re-arranged the depôt and left our usual note for Capt. Scott, wishing them a speedy return. To-morrow we hope to see and reach the Barrier, and be clear of the Beardmore for ever. We none of us minds the struggle we have been through to attain the amount of success so far reached. It is all for the good of science, as Crean says. We reached the depôt at 6.45 P.M.

22nd January 1912.

We made a good start this morning and Mr. Evans' eyes is got pretty well alright again, so things looks a bit



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brighter. After starting we soon got round the corner from the Granite Pillars to between the mainland and Mt. Hope, on rising up on the slope between the mountain and the mainland, as soon as we sighted the Barrier, Crean let go one huge yell enough to frighten the ponies out of their graves of snow, and no more Beardmore for me after this. When we began to descend on to the Barrier it only required one of us to drag the sledge down to within a mile of the pony and sledge depôt, after exchanging our sledge as arranged, picking up a small amount of pony meat, and fitted up bamboo for mast so that we shall be able to fix up a sail when favourable, we proceeded on our way to cross the Barrier. We have now 360 miles to travel geographically to get to Hut Point. Mr. Evans complained to me while outside the tent that he had a stiffness at the back of his legs behind the knees. I asked him what he thought it was, and he said could not account for it, so if he dont soon get rid of it I am to have a look and see if anything is the matter with him, as I know from what I have seen and been told before the symptoms of scurvy is pains and swelling behind the knee round the ankle and loosening of the teeth, ulcerated gums. To-night I watched to see his gums, and I am convinced he is on the point of something anyhow, and this I have spoken to Crean about, but he dont seem to realise it. But I have asked him to wait developments for a time. It seems we are in for more trouble now, but lets hope for the best.

23rd January 1912.

We got away pretty well and did a good journey, having covered about 14 miles over a fairly good surface. We have passed the Blizzard Camp and glad of it too, again to-day we saw in several places where the bridges on the crevasses had fallen through. A good job they none of them fell through when we were going over them as the width would have taken all through with them, and in every case where they had fallen through was where we had gone over, as the mark of the sledge was very distinct in each case. Mr. Evans seems better to-day.

24th January 1912.

Did a good run to-day over a good surface. The weather have been very warm, not much to write to-night as everything is going well.

25th January 1912.

Started off in very thick weather, the temperature is very high and the snow is wet and clogging all day on our ski, which made dragging heavy, and towards evening it got worse. After lunch we got a good breeze for an hour, when it changed to a blizzard and almost rained. We saw the depôt ahead sometimes, so we tried to reach it as we thought we might be in for another few days like we had near the land on our outward journey. Anyhow we reached it after a tremendous struggle owing to the wet and bad light. I took off my ski and carried them on my shoulder to finish up the last half a mile. The blizzard died down after we had camped and turned in for the night. Looked at the thermometer which showed 34.

26th January 1912.

This have been a most wonderful day for surface. This morning when we started the thermometer stood at 34, much too high for sledging. We were on ski or we might have been on stilts for the amount of snow clogging on our ski, dont know how we should have got on without our ski, as the snow was so very soft we sank right in when we tried to go on foot, but we were fortunate to get the wind behind us and able to make use of the sail. We made a very good day of it, did 13 miles : 8 of this after lunch. I did not feel well outside the tent this morning. I came over quite giddy and faint, but it passed off quickly and have felt no more of it all day.

27th January 1912.

We had a good run to-day with the sail up. It only required one of us to keep it straight, no need whatever to pull, but it was very hot, anyone could take off all their clothes and march. It is really too hot for this part of the world, but I daresay we shall soon get it a bit colder. Did

14½ miles, it is nice to be able to see the tracks and cairns of our outward journey. We feel satisfied when we have done a good day and in good time. Mr. Evans is now suffering from looseness of the bowels. Crean had a touch of it a few days ago, but he is quite alright again.

28th January 1912.

To-day it have been a very heavy drag. The snow is still very soft and the sun very hot, it fairly scorches anyone's face. We are almost black now and our hair is long and getting white through being exposed to the light, it gets bleached. I am glad to say it is cooler to-night, generally. We got over 12½ miles again to-day. Mr. Evans is still very loose in his bowels. This, of course, hinders us, as we have had to stop several times. Only another few more Sundays and we hope to be safely housed at Hut Point, or Cape Evans. We have now been out 97 days.

29th January 1912.

Another good day was helped by the sail all day. One man could again manage for about two hours. The weather is still very warm, plus 20 again. Did 16½ miles, only 14 to the next depôt. Mr. Evans is still suffering from the same complaint: have come to the conclusion to stop his pemmican, as I feel that it have got something to do with him being out of sorts. Anyhow we are going to try it. Gave him a little brandy and he is taking some chalk and opium pills to try and stop it. His legs are getting worse and we are quite certain he is suffering from scurvy, at least he is turning black and blue and several other colours as well.

30th January 1912.

Very bad light but fair wind, picked up the depôt this evening. Did the 14 miles quite in good time, after taking our food we found a shortage of oil and have taken what we think will take us to the next depôt. There seems to have been some leakage in the one can, but how we could not account for that we have left a note telling Capt. Scott how we found it, but they will have sufficient to carry them on to the next depôt, but we all know the amount of oil

allowed on the Journey is enough, but if any waste takes place it means extra precautions in the handling of it. Mr. Evans is still without pemmican and seems to have somewhat recovered from the looseness, but things are not by a long way with him as they should be. Only two more depôts now to pick up.

31st January 1912.

Another very good run to-day but the light being very bad we had to continually stop and steer by compass. This a difficult task, especially as there was no wind to help keep on the course, but it have cleared again to-night, the temperature is plus 20 in the day and 10 at night just now. Did 13 miles. Mr. Evans is allowed a little pemmican as the work is hard and it wants a little warm food to put life into anyone in this part of the world.

1st February 1912.

We had a very fine day but a very heavy pull, but we did 13 miles. Mr. Evans and myself have been out 100 days to-day. I have had to change my shirt again. This is the last clean side I have got. I have been wearing two shirts and each side will now have done duty next the skin, as I have changed round each month, and I have certainly found the benefit of it, and on the point we all three agree. Mr. Evans is still gradually worse: it is no good closing our eyes to the fact. We must push on as we have a long way to go yet.

2nd February 1912.

A very bad light again to-day: could not make much progress, only did 11 miles, but we must think ourselves lucky we have not had to lay up and get delayed, but we have had the wind and more behind us, otherwise we should have had to stop. Mr. Evans is no better but seems to be in great pain, but he keeps quite cheerful we are pleased to say.

3rd February 1912.

This morning we were forced to put Mr. Evans on his ski and strap him on, as he could not lift his legs. I looked at them again and found they are rapidly getting worse,

things are looking serious on his part, but we have been trying to pump him up he will get through alright, but he begins to think different himself, but if we get to One Ton and can get a change of food it may relieve him. He is a brick, there is plenty of pluck: one cannot but admire such pluck. The light have been dreadful all day and I seemed to have got a bit depressed at times, not being able to see anything to know where I was on the course or not and not getting a word from Mr. Evans. I deliberately went off the course to see if anyone was taking notice but to my surprise I was quickly told I was off the course. This I thought, but wanted to know if he was looking out, which he was. It came on to bliz after we camped, we ought to reach Mt. Hooper to-morrow night.

4th February 1912.

Started in splendid weather, but the surface was bad and dragging was very heavy, but it improved as the day went on, and we arrived at the depôt at 7.40 P.M. We are now 180 miles from Hut Point, and this Sunday night we hope to be only two more Sundays on the Barrier. No improvement in Mr. Evans, much worse. We have taken out our food and left nearly all the pemmican as we dont require it on account of none of us caring for it, therefore we are leaving it behind for the others. They may require it. We have left our note and wished them every success on their way, but we have decided it is best not to say anything about Mr. Evans being ill or suffering from scurvy. This old cairn have stood the weather and is still a huge thing.

5th February 1912.

Had a very fine day and a good light all day, which makes things much more cheerful. Did not get away before 9 o'clock but we did 11½ miles, it is gradually getting colder. Mr. Evans is still getting worse, to-day he is suffering from looseness in the bowels: shall have to stop his pemmican.

6th February 1912.

Another fine day but sun was very hot and caused us to sweat a good deal, but we dont mind as we are pretty used

to such changes. We shall soon be looking for land ahead, which will be Mt. Discovery or Mt. Erebus, we have 155 miles to go to Hut Point: done alright again 13½ miles, we do wonderfully well especially as Mr. Evans have got to go very slowly first off after stopping until he gets the stiffness out of his legs, but he is suffering a good deal and in silence, he never complains, but he dont get much sleep. We shall all be glad when we arrive at One Ton, where there is a change of food for us all. The pemmican is too much, especially when the weather is warm.

7th February 1912.

A very fine day but heavy going. We are bringing the land in sight. The day have been simply lovely, did 12 miles. No better luck with our patient, he gets along without a murmur. We have got to help him in and out of the tent, but we have consulted on the matter and he is determined to go to the last, which we know is not far off, as it is difficult for him to stand, but he is the essence of a brick to keep it up, but we shall have to drag him on the sledge when he cant go any further.

8th February 1912.

To-day have been very favourable and fine, we had a good breeze and set sail after lunch. If we get a good day to-morrow we hope to reach One Ton. Mr. Evans have passed a good deal of blood to-day, which makes things look a lot worse. I have to do nearly everything for him now.

9th February 1912.

A very fine day and quite warm. Reached the depôt at 5.5 P.M. and we all had a good feed of oatmeal. Oh, what a God-send to get a change of food ! We have taken enough food for 9 days, which if we still keep up our present rate of progress it ought to take us in to Hut Point. We cannot take too heavy a load, as there is only the two of us pulling now, and this our last port of call before we reach Hut Point, but things are not looking any too favourable for us, as our leader is gradually getting lower every

day. It is almost impossible for him to get along, and we are still 120 miles from Hut Point.

10th February 1912.

We did a good march, in very thick weather. To-night we are camped and I am sorry to say Mr. Evans is in a very bad state. If this is scurvy I am sorry for anyone it attacks. We shall do our utmost to get him back alive, although he is so ill, he is very cheerful, which is very good and tries to do anything to help us along. We are thinking the food, now we have got a change, may improve things. I am very pleased to say Crean and myself are in the best of health, which we are thankful for.

11th February 1912.

To-day we built a cairn and left all our gear we could do without, as it is impossible for us to drag the load now, and Mr. Evans we think is doing well as long as he can keep on his legs. We have had a very bad light all day, and to-night we have a bliz on us, so we had to camp early. Our day's run has been 11 miles. We are now about 99 miles from our base.

12th February 1912.

We did not get away until 10 o'clock on account of bad weather, but after we put Mr. Evans on his ski he went on slowly. It is against our wish to have to send him on a little in advance, but it is best as we shall have to drag him out of this we are certain. He has fainted on two or three occasions, but after a drop of brandy he has been able to proceed, but it is very awkward, especially as the temperature is so low. We are afraid of his getting frost-bitten. Our progress is very slow, the light is very bad, and it is seldom we see the land.

13th February 1912.

We got away in good time, but progress was slow, and Mr. Evans could not go, and we consulted awhile and came to the conclusion it would be best to put him on the sledge, otherwise he may not pull through, so we stopped and camped, and decided to drop everything we can possibly do without, so we have only got our sleeping bags, cooker, and what little food and oil we have left. Our load is not

much, but Mr. Evans on the sledge makes it pretty heavy work for us both, but he says he is comfortable now. This morning he wished us to leave him, but this we could not think of. We shall stand by him to the end one way or other, so we are the masters to-day. He has got to do as we wish and we hope to pull him through. This morning when we depôted all our gear I changed my socks and got my foot badly frostbitten, and the only way was to fetch it round. So although Mr. Evans was so bad he proposed to stuff it on his stomach to try and get it right again. I did not like to risk such a thing as he is certainly very weak, but we tried it, and it succeeded in bringing it round, thanks to his thoughtfulness, and I shall never forget the kindness bestowed on me at a critical time in our travels, but I think we could go to any length of trouble to assist one another; in such time and such a place we must trust in a higher power to pull us through. When we pack up now and have to move off we have to get everything ready before we attempt to move the tent, as it is impossible for our leader now to stand, therefore it is necessary to get him ready before we start. We then pull the sledge alongside his bag and lift him on to it and strap him on. It is a painful piece of work and he takes it pretty well, but we can't help hurting him, as it is very awkward to lift him, the snow being soft and the light so bad, but he dont complain. The only thing we hear him grind his teeth.

14th February 1912.

Another good start after the usual preparation, we have not got much to pack, but it takes us some time to get our invalid ready, the surface is very bad and our progress is very slow, but we have proposed to go longer hours and try to cover the distance, that is if we can stick it ourselves.

15th February 1912.

We started in fine weather this morning, but it soon came over thick and progress became slow. We had to continually consult the compass, as we have had no wind to assist us, but after awhile the sun peeped out and the wind

sprang up and we were able to set sail, which helped us put in a good march.

16th February 1912.

To-day it have been a very heavy drag all day, and the light is very bad, but we had the pleasure of seeing Castle Rock and Observation Hill. We uncovered Mr. Evans to let him have a look and we have reduced our ration now to one half as it is impossible for us to reach Hut Point under four days, that is if everything goes favourable with us.

17th February 1912.

To-day it has been thick, this morning soon after we started we saw what we thought was the dog tent [the two dog-teams going out to meet the Polar Party], a thing we had been looking for to try and get relief, but when we came up to it we found it was only a piece of biscuit box stuck on an old camp for a guide. It shows how deceiving the things here are. I can tell you our hopes were raised, but on reaching it they dropped again considerably. We were able to see the land occasionally, and during one of the breaks this afternoon we spotted the motor. Oh, what joy! We again uncovered Mr. Evans to let him have a look and after trudging along for another three hours we brought up alongside it and camped for the night. We are now only a little over 30 miles from Hut Point: if we could only see the dogs approaching us, but they, we think, may have passed us while the weather have been thick. Mr. Evans is getting worse every day, we are almost afraid to sleep at night as he seems very weak. If the temperature goes much lower it will be a job to keep him warm. We have found some biscuits here at the motor but nothing else, but that will assist greatly on our way. The slogging have been heavy all day. We are pretty tired to-night. I dont think we have got the go in us we had, but we must try and push on.

18th February 1912.

I started to move Mr. Evans this morning, but he completely collapsed and fainted away. Crean was very upset and almost cried, but I told him it was no good to create a

scene but put up a bold front and try to assist. I really think he thought Mr. Evans had gone, but we managed to pull him through. We used the last drop of brandy. After awhile we got him on the sledge and proceeded as usual, but finding the surface very bad and we were unable to make less than a mile an hour, we stopped and decided to camp. We told Mr. Evans of our plans, which were: Crean should proceed, it being a splendid day, on foot to Hut Point to obtain relief if possible. This we had agreed to between ourselves. I offered to do the Journey and Crean remain behind, but Tom said he would much rather I stayed with the invalid and look after him, so I thought it best I should remain, and these plans were agreed to by all of us, so after we had camped the next thing was the food problem. We had about a day's provisions with extra biscuit taken from the motor, and a little extra oil taken from the same place, so we gave Crean what he thought he could manage to accomplish the Journey of 30 miles geographical on, which was a little chocolate and biscuits. We put him up a little drink, but he would not carry it. What a pity we did not have some ski, but we dumped them to save weight. So Crean sailed away in splendid weather for a try to bring relief. I was in a bit of a sweat all day and remained up to watch the weather till long after midnight. I was afraid of the weather, but it kept clear and I thought he might have reached or got within easy distance of Hut Point; but there was the possibility of his dropping down a crevasse, but that we had to leave to chance, but none the more it was anxious moments as if it comes on to drift the weather is very treacherous in these parts. After Crean left I left Mr. Evans and proceeded to Corner Camp which was about a mile away, to see if there was any provisions left there that would be of use to us. I found a little butter, a little cheese, and a little treacle that had been brought there for the ponies. I also went back to the motor and got a little more oil while the weather was fine. I also got a large piece of burbery and tied on a long bamboo and stuck up a big flag on our sledge so that anyone could not pass our way without seeing us or our flag. I found a note left at

Corner Camp by Mr. Day saying there was a lot of very bad crevasses between there and the sea ice, especially off White Island. This put me in a bit of a fix, as I, of course, at once thought of Crean. He being on foot was more likely to go down than he would had he been on ski. I did not tell Mr. Evans anything about the crevasses, as I certainly thought it would be best kept from him. I just told him the note was there and all was well.

19th February 1912.

To-day Mr. Evans seems a bit better and more cheerful, the rest will do him good and assist in getting a little strength. We have been wondering when relief will reach us, but we cannot expect it for at least a day or two yet at the earliest. It was very thick this morning and also very cold. The temperature is dropping rapidly. Our tent was all covered in frost rime to-day, a sure sign of colder weather. It was very thick this morning but cleared as the day advanced, but we could not see Hut Point. I wonder if poor old Tom reached alright. We have very little food now except biscuit, but oil is better. We have got ½ gallon and if relief dont come for some time we shall be able to have hot water when all other things are gone. I have thought out a plan for the future, in case of no relief coming, but of course we took all things into consideration in case of failure, but we must hope for the best. Of course I know it is no use thinking of Mr. Evans being able to move any further as he cant stand at all, the only thing is, we may have missed the dogs, if so there is still a chance of someone being at Hut Point. I am cold now and cannot write more to-night. We lose the sun at midnight now. If all had went well we should have been home by now.

20th February 1912.

Tuesday not a nice day. A low drift all the morning and increased to a blizzard at times. Have had to remain in the tent all day to try and keep warm. Have not got much food except biscuits. Mr. Evans is about the same but quite cheerful. We have had whole journey over and

over : it have passed these three days away. We have wondered how they are getting on behind us ; we have worked it out and they ought to be on the Barrier now, with anything of luck. We have been gambling on the condition of the ice and the possibility of the open water at Hut Point at any time now, and also about what news of home, although home is one of the foremost thoughts we hardly ever mention it, only what we are going to have to eat when we do arrive there. I think we have got everything that is good down on our list. Of course New Zealand have got to be answerable for a good deal: plenty of apples we are going to have and some nice home-made cake, not too rich, as we think we can eat more. I wonder if the mules will have arrived, as I am to look after them till Capt. Oates returns, as Anton will be gone home, or at least going soon. We shall have to hurry up as the ship is to leave again on the 2nd of March, as it is not safe to remain longer in these regions. I am now too cold to write, and I dont seem settled at all and the weather is still pretty bad outside, so we are not going to look for anything to come along tonight. "Hark!" from us both. "Yes, it is the dogs near. Relief at last. Who is there?" I did not stay to think more before I was outside the tent. "Yes, sir, it is alright." The Doctor and Dimitri. "How did you see us?" "The flag Lash," says Dimitri. The Doctor, "How is Mr. Evans?" "Alright, but low." But this had a good effect on him. After the first few minutes we got their tent pitched and the food they brought us I was soon on the way preparing a meal for us all, but Mr. Evans cannot have pemmican, but the Doctor have brought everything that will do him good, some onions to boil and several other things. Dimitri brought along a good lump of cake: we are in clover. Tonight after the Doctor had examined my patient and we got through a good deal of talk about everything we could think of, especially home news and the return parties and the ship and those in her. We were sorry to hear she had not been able to get very near, and that the mules had arrived, and I dont know what, we now settled down for a good night. It seems to me we are in a new world, a weight

is off my mind and I can once more see a bright spot in the sky for us all, the gloom is now removed. The bliz is bad outside, and Doctor and Dimitri is gone and turned in, so will [I] once more, but sleep is out of the question.

21st February 1912.

The day have been very bad and we are obliged to remain until it clears. We are going to move off as soon as it clears, the day have been very cold, so we have had to remain in our bags, but things are alright and we have got plenty to eat now. We have all retired for the night as the bliz is still raging outside.

22nd February 1912.

The wind went down about 9 P.M., so we began to move and were ready to kick off at 10, and proposed to do the journey in two stages. It was fearful heavy going for the poor dogs, we arranged so that Mr. Evans was on Dimitri's sledge and Doctor and myself was on the other. We have done about half the journey and are now camped for a rest for the dogs and ourselves. We had a stiff 16 miles: the Doctor and myself, we took turns in riding on the sledge and walking and running to keep up to the dogs. Sometimes we sank in up to the knees, but we struggled through it. My legs is the most powerful part of me now, but I am tired and shall be glad when it is over. I must lie down now, as we are starting again soon for Hut Point, but the surface is getting better as we have passed White Island and can see so plainly the land. Castle Rock and good old Erebus look so stately with the smoke rolling out. It is so clear and calm and peaceful. What a change in our surroundings of a few days ago and also our prospects. Doctor and Dimitri have done everything they could for us.

22nd February 1912.

We started off after a rest for the dogs and reached here at Hut Point at 1 P.M. where we can rest in peace for a time. Dimitri and Crean are going to Cape Evans: the ship is nowhere in sight. Have had to get some seal meat and ice and prepare a meal. Mr. Evans is alright and

asleep. We are looking for a mail now. How funny we should always be looking for something else, now we are safe.

[End of Lashly's Diary.]

Crean has told me the story of his walk as follows:

He started at 10 on Sunday morning and "the surface was good, very good surface indeed," and he went about sixteen miles before he stopped. Good clear weather. He had three biscuits and two sticks of chocolate. He stopped about five minutes, sitting on the snow, and ate two biscuits and the chocolate, and put one biscuit back in his pocket. He was quite warm and not sleepy.

He carried on just the same and passed Safety Camp on his right some five hours later, and thinks it was about twelve-thirty on Monday morning that he reached the edge of the Barrier, tired, getting cold in the back and the weather coming on thick. It was bright behind him but it was coming over the Bluff, and White Island was obscured though he could still see Cape Armitage and Castle Rock. He slipped a lot on the sea-ice, having several falls on to his back and it was getting thicker all the time. At the Barrier edge there was a light wind, now it was blowing a strong wind, drifting and snowing. He made for the Gap and could not get up at first. To avoid taking a lot out of himself he started to go round Cape Armitage; but soon felt slush coming through his finnesko (he had no crampons) and made back for the Gap. He climbed up to the left of the Gap and climbed along the side of Observation Hill to avoid the slippery ice. When he got to the top it was still clear enough to see vaguely the outline of Hut Point, but he could see no sledges nor dogs. He sat down under the lee of Observation Hill, and finished his biscuit with a bit of ice: "I was very dry,"—slid down the side of Observation Hill and thought at this time there was open water below, for he had no goggles on the march and his eyes were strained. But on getting near the ice-foot he found it was polished sea-ice and made his way round to the hut under the ice-foot. When he got close he saw the dogs and

sledges on the sea-ice, and it was now blowing very hard with drift. He walked in and found the Doctor and Dimitri inside. "He gave me a tot first, and then a feed of porridge—but I couldnt keep it down: thats the first time in my life that ever it happened, and it was the brandy that did it."

CHAPTER XIII

SUSPENSE

All the past we leave behind;
We debouch upon a newer, mightier world, varied world;
Fresh and strong the world we seize, world of labour and the march,
Pioneers! O pioneers!

We detachments steady throwing,
Down the edges, through the passes, up the mountains steep,
Conquering, holding, daring, venturing, as we go, the unknown ways,
Pioneers! O pioneers!

WALT WHITMAN.

LET us come back to Cape Evans after the return of the First Supporting Party.

Hitherto our ways had always been happy: for the most part they had been pleasant. Scott was going to reach the Pole, probably without great difficulty, for when we left him on the edge of the plateau he had only to average seven miles a day to go there on full rations. We ourselves had averaged 14.2 geographical miles a day on our way home to One Ton Depôt, and there seemed no reason to suppose that the other two parties would not do likewise, and the food was not only sufficient but abundant if such marches were made. Thus we were content as we wandered over the cape, or sat upon some rock warmed by the sun and watched the penguins bathing in the lake which had formed in the sea-ice between us and Inaccessible Island. All round us were the cries of the skua gulls as they squabbled among themselves, and we heard the swish of their wings as they swooped down upon a man who wandered too near their nests. Out upon the sea-ice, which was

soggy and dangerous, lay several seal, and the bubblings and whistlings and gurglings which came from their throats chimed musically in contrast to the hoarse aak, aak, of the Adélie penguins: the tide crack was sighing and groaning all the time: it was very restful after the Barrier silence.

Meanwhile the Terra Nova had been seen in the distance, but the state of the sea-ice prevented her approach. It was not until February 4 that communication was opened with her and we got our welcome mails and news of the world during the last year. We heard that Campbell's party had been picked up at Cape Adare and landed at Evans Coves. We started unloading on February 9, and this work was continued until February 14: there was about three miles of ice between the ship and the shore and we were doing more than twenty miles a day. In the case of men who had been sledging much, and who might be wanted to sledge again, this was a mistake. Latterly the ice began to break up, and the ship left on the 15th, to pick up the Geological Party on the western side of McMurdo Sound. But she met great obstacles, and her record near the coasts this year is one of continual fights against pack-ice, while the winds experienced as the season advanced were very strong. On January 13 the fast ice at the mouth of McMurdo Sound extended as far as the southern end of the Bird Peninsula: ten days later they found fast ice extending for thirty miles from the head of Granite Harbour. Later in the season the most determined efforts were made again and again to penetrate into Evans Coves in order to pick up Campbell and his men, until the ice was freezing all round them, and many times the propeller was brought up dead against blocks of ice.[1]

The expedition was originally formed for two years from the date of leaving England. But before the ship left after landing us at Cape Evans in January 1911 the possibility of a third year was considered, and certain requests for additional transport and orders for stores were sent home. Thus it came about that the ship now landed not

[1] See Introduction, pp. l, lii-lix.

only new sledges and sledging stores but also fourteen dogs from Kamchatka and seven mules, with their food and equipment. The dogs were big and fat, but the only ones which proved of much service for sledging were Snowy, a nice white dog, and Bullett. It was Oates' idea that mules might prove a better form of transport on the Barrier than ponies. Scott therefore wrote to Sir Douglas Haig, then C.-in-C. in India, that if he failed to reach the Pole in the summer of 1911–12, "it is my intention to make a second attempt in the following season provided fresh transport can be brought down: the circumstances making it necessary to plan to sacrifice the transport animals used in any attempt.

"Before directing more ponies to be sent down I have thoroughly discussed the situation with Captain Oates, and he has suggested that mules would be better than ponies for our work and that trained Indian Transport Mules would be ideal. It is evident already that our ponies have not a uniform walking pace and that in other small ways they will be troublesome to us although they are handy little beasts."

The Indian Government not only sent seven mules but when they arrived we found that they had been most carefully trained and equipped. In India they were in the charge of Lieutenant George Pulleyn, and the care and thought which had been spent upon them could not have been exceeded: the equipment was also extremely good and well adapted to the conditions, while most of the improvements made by us as the result of a year's experience were already foreseen and provided. The mules themselves, by name Lal Khan, Gulab, Begum, Ranee, Abdullah, Pyaree and Khan Sahib, were beautiful animals.

Atkinson would soon have to start on his travels again. Before we left Scott at the top of the Beardmore he gave him orders to take the two dog-teams South in the event of Meares having to return home, as seemed likely. This was not meant in any way to be a relief journey. Scott said that he was not relying upon the dogs; and that in view of the sledging in the following year, the dogs

were not to be risked. Although it was settled that some members of the expedition would stay, while others returned to New Zealand, Scott and several of his companions had left undecided until the last moment the question of whether they would themselves remain in the South for another year. In the event of Scott deciding to return home the dog-teams might make the difference between catching or missing the ship. I had discussed this question with Wilson more than once, and he was of opinion that the business affairs of the expedition demanded Scott's return if possible: Wilson himself inclined to the view that he himself would stay if Scott stayed, and return if Scott returned. I think that Oates meant to return, and am sure that Bowers meant to stay: indeed he welcomed the idea of one more year in a way which I do not think was equalled by any other member of the expedition. For the most part we felt that we had joined up for two years, but that if there was to be a third year we would rather see the thing through than return home.

I hope I have made clear that the primary object of this journey with the dog-teams was to hurry Scott and his companions home so that they might be in time to catch the ship if possible, before she was compelled by the close of the season to leave McMurdo Sound. Another thing which made Scott anxious to communicate with the ship if possible before the season forced her to leave the Sound was his desire to send back news. From many remarks which he made, and also from the discussions in the hut during the winter, it was obvious that he considered it was of the first importance that the news of reaching the Pole, if it should be reached, be communicated to the world without the delay of another year. Of course he would also wish to send news of the safe return of his party to wives and relations as soon as possible. It is necessary to emphasize the fact that the dog-teams were intended to hasten the return of the Polar Party, but that they were never meant to form a relief journey.

But now Atkinson was left in a rather difficult position. I note in my diary, after we had reached the hut, that

"Scott was to have sent back instructions for the dog party with us, but these have, it would seem, been forgotten"; but it may be that Scott considered that he had given these instructions in a conversation he had with Atkinson at the top of the Beardmore Glacier, when Scott said, "with the depôt [of dog-food] which has been laid come as far as you can."

According to the plans for the Polar Journey the food necessary to bring the three advance parties of man-haulers back from One Ton Depôt to Hut Point was to be taken out to One Ton during the absence of these parties. This food consisted of five weekly units of what were known as XS rations. It was also arranged that if possible a depôt of dog-biscuit should be taken out at the same time: this was the depôt referred to above by Scott. In the event of the return of the dog-teams in the first half of December, which was the original plan, the five units of food and the dog-biscuit would have been run out by them to One Ton. If the dog-teams did not return in time to do this a man-hauling party from Cape Evans was to take out three of the five units of food.

It has been shown that the dog-teams were taken farther on the Polar Journey than was originally intended,[1] indeed they were taken from 81° 15′, where they were to have turned back, as far as 83° 35′. Nor were they able to make the return journey in the fast time which had been expected of them, and the dog-drivers were running very short of food and were compelled to encroach to some extent upon the supplies left to provide for the wants of those who were following in their tracks.[2] The dog-teams did not arrive back at Cape Evans until January 4.

Meanwhile a man-hauling party from Cape Evans, consisting of Day, Nelson, Clissold and Hooper, had already, according to plan, taken out three of the five XS rations for the returning parties. The weights of the man-hauling party did not allow for the transport of the remaining two XS rations, nor for any of the dog-food. Thus it was that when Atkinson came to make his plans to go South with

[1] See pp. 353, 383.

[2] See pp. 382, 383.

the dogs he found that there was no dog-food south of Corner Camp, and that the rations for the return of the Polar Party from One Ton Depôt had still to be taken out. That is to say, the depôt of dog-food spoken of by Scott did not exist. There was, however, enough food already at One Ton to allow the Polar Party to come in on reduced rations. This meant that what the dog-teams could do was limited, and was much less than it might have been had it been possible to take out the depôt of dog-food to One Ton. Also the man-food for the Polar Party had to be added to the weights taken by the dogs.

To estimate even approximately at what date a party will reach a given point after a journey of this length when the weather conditions are always uncertain and the number of travelling days unknown, was a most difficult task. The only guide was the average marches per diem made by our own return party, and the average of the second return party if it should return before the dog party set out. A week one way or the other was certainly not a large margin. A couple of blizzards might make this much difference.

In the plan of the Southern Journey Scott, working on Shackleton's averages, mentions March 27 as a possible date of return to Hut Point, allowing seven days in from One Ton. Whilst on the outward journey I heard Scott discuss the possibility of returning in April; and the Polar Party had enough food to allow them to do this on full rations.

Atkinson and Dimitri with the two dog-teams left Cape Evans for Hut Point on February 13 because the sea-ice, which was our only means of communication between these places, and so to the Barrier, was beginning to break up. Atkinson intended to leave Hut Point for the Barrier in about a week's time. At 3.30 A.M. on February 19 Crean arrived with the astounding news that Lieutenant Evans, still alive but at his last gasp, was lying out near Corner Camp, and that Lashly was nursing him; that the Last Supporting Party had consisted of three men only, a possibility which had never been considered; and that they had

left Scott, travelling rapidly and making good averages, only 148 geographical miles from the Pole. Scott was so well advanced that it seemed that he would be home much earlier than had been anticipated.

A blizzard which had been threatening on the Barrier, and actually blowing at Hut Point, during Crean's solitary journey, but which had lulled as he arrived, now broke with full force, and nothing could be done for Evans until it took off sufficiently for the dog-teams to travel. But in the meantime Crean urgently wanted food and rest and warmth. As these were supplied to him Atkinson learned bit by bit the story of the saving of Evans' life, told so graphically in Lashly's diary which is given in the preceding chapter, and pieced together the details of Crean's solitary walk of thirty-five statute miles. This effort was made, it should be remembered, at the end of a journey of three and a half months, and over ground rendered especially perilous by crevasses, from which a man travelling alone had no chance of rescue in case of accident. Crean was walking for eighteen hours, and it was lucky for him, as also for his companions, that the blizzard which broke half an hour after his arrival did not come a little sooner, for no power on earth could have saved him then, and the news of Evans' plight would not have been brought.

The blizzard raged all that day, and the next night and morning, and nothing could be done. But during the afternoon of the 20th the conditions improved, and at 4.30 P.M. Atkinson and Dimitri started with the two dog-teams, though it was still blowing hard and very thick. They travelled, with one rest for the dogs, until 4.30 P.M. the next day, but had a very hazy idea where they were most of the time, owing to the vile weather: once at any rate they seem to have got right in under White Island. When they camped the second time they thought they were in the neighbourhood of Lashly's tent, and in a temporary clearance they saw the flag which Lashly had put up on the sledge. Evans was still alive, and Atkinson was able to give him immediately the fresh vegetables, fruit, and seal meat which his body wanted. Atkinson has never been able to

express adequately the admiration he feels for Lashly's care and nursing.

All that night and the next day the blizzard continued and made a start impossible, and it was not until 3 A.M. on the morning of the 22nd that they could start for Hut Point, Evans being carried in his sleeping-bag on the sledge. Lashly has told how they got home.

At Cape Evans we knew nothing of these events, which had made reorganization inevitable. It was clear that Atkinson, being the only doctor available, would have to stay with Evans, who was very seriously ill: indeed Atkinson told me that another day, or at the most two, would have finished him. In fact he says that when he first saw him he thought he must die. It was a considerable surprise then when Dimitri with Crean and one dog-team reached Cape Evans about mid-day on February 23 with a note from Atkinson, who said that he thought he had better stay with Lieutenant Evans and that some one else should take out the dogs. He suggested that Wright or myself should take them. This was our first intimation that the dogs had not already gone South.

Wright and I started for Hut Point by 2 P.M. the same day and on our arrival it was decided by Atkinson that I was to take out the dogs. Owing to the early departure of our meteorologist, Simpson, Wright, who had special qualifications for this important work, was to remain at Cape Evans. Dimitri having rested his dog-team overnight at Cape Evans arrived at Hut Point on the morning of the 24th.

Now the daily distance which every 4-man party had to average from Hut Point to its turning-point and back to Hut Point, so as to be on full rations all the way, was only 8.4 geographical miles. From Hut Point to the latitude in which he was last seen, 87° 32′ S., Scott had averaged more than ten geographical miles a day.

Taking into consideration the advanced latitude, 87° 32′ S., at which the Second Return Party had left Scott, and the extremely good daily averages these two parties had marched on the plateau up to this point, namely 12.3

geographical miles a day; seeing also that the First Return Party had averaged 14.2 geographical miles on their return from 85° 3′ S. to One Ton Depôt; and the Second Return Party had averaged 11.2 geographical miles on their return from 87° 32′ S. to the same place, although one of the three men was seriously ill; it was supposed that all the previous estimates made for the return of the Polar Party were too late, and that the opportunity to reach One Ton Camp before them had been lost. Meanwhile the full rations for their return over the 140 miles (statute) from One Ton to Hut Point were still at Hut Point.

My orders were given me by Atkinson, and were verbal, as follows:

1. To take 24 days' food for the two men, and 21 days' food for the two dog-teams, together with the food for the Polar Party.

2. To travel to One Ton Depôt as fast as possible and leave the food there.

3. If Scott had not arrived at One Ton Depôt before me I was to judge what to do.

4. That Scott was not in any way dependent on the dogs for his return.

5. That Scott had given particular instructions that the dogs were not to be risked in view of the sledging plans for next season.

Since it had proved impossible to take the depôt of dog-food, together with the full Polar Party rations, to One Ton before this; considering the unforeseen circumstances which had arisen; and seeing that this journey of the dog-teams was not indispensable, being simply meant to bring the last party home more speedily, I do not believe that better instructions could have been given than these of Atkinson.

I was eager to start as soon as the team which had come back from Cape Evans was rested, but a blizzard prevented this. On the morning of the 25th it was thick as a hedge, but it cleared enough to pack sledges in the afternoon, and when we turned into our bags we could see Observation Hill. We started at 2 A.M. that night.

I confess I had my misgivings. I had never driven one dog, let alone a team of them; I knew nothing of navigation; and One Ton was a hundred and thirty miles away, out in the middle of the Barrier and away from landmarks. And so as we pushed our way out through the wind and drift that night I felt there was a good deal to be hoped for, rather than to be expected. But we got along very well, Dimitri driving his team in front, as he did most of this journey, and picking up marks very helpfully with his sharp eyes. In the low temperatures we met, the glasses which I must wear are almost impossible, because of fogging. We took three boxes of dog-biscuit from Safety Camp and another three boxes from a point sixteen miles from Hut Point. Here we rested the dogs for a few hours, and started again at 6 P.M. All day the light was appalling, and the wind strong, but to my great relief we found Corner Camp after four hours' more travelling, the flag showing plainly, though the cairn itself was invisible when a hundred yards away. This was the last place where there was any dog-food on the route, and the dogs got a good feed after doing thirty-four miles (statute) for the day's run. This was more than we had hoped: the only disquieting fact was that both the sledge-meters which we had were working wrong: the better of the two seemed however to be marking the total mileage fairly correctly at present, though the hands which indicated more detailed information were quite at sea. We had no minimum thermometer, but the present temperature was $-4°$.

"*February* 27. Mount Terror has proved our friend today, for the slope just above the Knoll has remained clear when everything else was covered, and we have steered by that—behind us. It seemed, when we started in low drift, that we should pick up nothing, but by good luck, or good I don't know what, we have got everything: first the motor, then pony walls at 10 miles, where we stopped and had a cup of tea. I wanted to do 15 miles, but we have done $18\frac{1}{2}$ miles on the best running surface I have ever seen. After lunch we got a cairn which we could not see twenty yards away after we had reached it, but which we could see

for a long way on the southern horizon, against a thin strip of blue sky. We camped just in time to get the tent pitched before a line of drift we saw coming out of the sky hit us. It is now blowing a mild blizzard and drifting. Forty-eight miles in two days is more than I expected: may our luck continue. Dogs pulling very fit and not done up.

"*February* 28. I had my first upset just after starting, the sledge capsizing on a great sastrugus like the Ramp. Dimitri was a long way ahead and all behind was very thick. I had to unload the sledge for I could not right it alone. Just as I righted it the team took charge. I missed the driving-stick but got on to the sledge with no hope of stopping them, and I was carried a mile to the south, leaving four boxes of dog-food, the weekly bag, cooker, and tent poles on the ground. The team stopped when they reached Dimitri's team, and by then the gear was out of sight. We went back for it, and made good 16¾ miles for the day on a splendid surface. The sun went down at 11.15 (10.15 A.T.), miraged quite flat on top. After he had gone down a great bonfire seemed to blaze out from the horizon. Now −22° and we use a candle for the first time.

"*February* 29. *Bluff Depôt.* If anybody had told me we could reach Bluff Depôt, nearly ninety miles, in four days, I would not have believed it. We have had a good clear day with much mirage. Dogs a bit tired."[1]

The next three days' run took us to One Ton. On the day we left Bluff Depôt, which had been made a little more than a year ago, when certain of the ponies were sent home on the Depôt Journey,[2] but which no longer contained any provisions, we travelled 12 miles; there was a good light and it was as warm as could be expected in March. The next day (March 2) we did 9 miles after a cold and sleepless night, −24° and a mild blizzard from N.W. and quite thick. On the night of March 3 we reached One Ton, heading into a strongish wind with a temperature of −24°. These were the first two days on which we had cold weather,

[1] My own diary.

[2] See p. 115.

but it was nothing to worry about for us, and was certainly not colder than one could ordinarily have expected at this time of year.

Arrived at One Ton my first feeling was one of relief that the Polar Party had not been to the Depôt and that therefore we had got their provisions out in time. The question of what we were to do in the immediate future was settled for us; for four days out of the six during which we were at One Ton the weather made travelling southwards, that is against the wind, either entirely impossible or such that the chance of seeing another party at any distance was nil. On the two remaining days I could have run a day farther South and back again, with the possibility of missing the party on the way. I decided to remain at the Depôt where we were certain to meet.

On the day after we arrived at One Ton (March 4) Dimitri came to me and said that the dogs ought to be given more food, since they were getting done and were losing their coats: they had, of course, done a great deal of sledging already this year. Dimitri had long experience of dog-driving and I had none. I thought and I still think he was right. I increased the dog ration therefore, and this left us with thirteen more days' dog-food, including that for March 4.

The weather was bad when we were at One Ton, for when it was blowing the temperature often remained comparatively low, and when it was not blowing it dropped considerably, and I find readings in my diary of $-34°$ and $-37°$ at 8 P.M. Having no minimum thermometer we did not know the night temperatures. On the other hand I find an entry: "To-day is the first real good one we have had, only about $-10°$ and the sun shining,—and we have shifted the tent, dried our bags and gear a lot, and been pottering about all day." At this time, however, when we were at One Ton I looked upon these conditions as being a temporary cold snap: there was no reason then to suppose these were normal March conditions in the middle of the Barrier, where no one had ever been at this time of year. I believe now they are normal: on the other hand,

in our meteorological report Simpson argues that they were abnormal for the Barrier at this time of year.[1]

Since there was no depôt of dog-food at One Ton it was not possible to go farther South (except for the one day mentioned above) without killing dogs. My orders on this point were perfectly explicit; I saw no reason for disobeying them, and indeed it appeared that we had been wrong to hurry out so soon, before the time that Scott had reckoned that he would return, and that the Polar Party would really come in at the time Scott had calculated before starting rather than at the time we had reckoned from the data brought back by the Last Return Party.

From the particulars already given it will be seen that I had no reason to suspect that the Polar Party could be in want of food. The Polar Party of five men had according to our rations plenty of food either on their sledge or in the depôts. In addition they had a lot of pony meat depôted at Middle Glacier Depôt and onwards from there. Though we did not know it, the death of Evans at the foot of the Beardmore Glacier provided an additional amount of food for the four men who were then left. The full amount of oil for this food had been left in the depôts; but we know now what we did not know then, that some of it had evaporated. These matters are discussed in greater detail in the account of the return of the Polar Party and after.[2]

Thus I felt little anxiety for the Polar Party. But I was getting anxious about my companion. Soon after arrival at One Ton it was clear that Dimitri was feeling the cold. He complained of his head; then his right arm and side were affected; and from this time onwards he found that he could do less and less with his right side. Still I did not worry much about it, and my decision as to our movements was not affected by this complication. I decided to allow eight days' food for our return, which meant that we must start on March 10.

"*March* 10. Pretty cold night: – 33° when we turned

[1] *British Antarctic Expedition, 1910–1913*, "Meteorology," by G. C. Simpson, vol. i. pp. 28-30.

[2] See pp. 550-556.

out at 8 A.M. Getting our gear together, and the dogs more or less into order after their six days was cold work, and we started in minus thirties and a head wind. The dogs were mad,—stark, staring lunatics. Dimitri's team wrecked my sledge-meter, and I left it lying on the ground a mile from One Ton. All we could do was to hang on to the sledge and let them go: there wasn't a chance to go back, turn them or steer them. Dimitri broke his driving-stick: my team fought as they went: once I was dragged with my foot pinned under my driving-stick, which was itself jammed in the grummet: several times I only managed to catch on anywhere: this went on for six or seven miles, and then they got better." [1]

Our remaining sledge-meter was quite unreliable, but following our outward tracks (for it became thick and overcast), and judging by our old camping sites, we reckoned that we had done an excellent run of 23 to 24 miles (statute) for the day. The temperature when we camped was only − 14°. However it became much colder in the night, and when we turned out it was so thick that I decided we must wait. At 2 P.M. on March 11 there was one small patch of blue sky showing, and we started to steer by this : soon it was blowing a mild blizzard, and we stopped after doing what I reckoned was eight miles, steering by trying to keep the wind on my ear: but I think we were turning circles much of the time. It blew hard and was very cold during the night, and we turned out on the morning of March 12 to a blizzard with a temperature of − 33°: this gradually took off, and at 10 A.M. Dimitri said he could see the Bluff, and we were right into the land, and therefore the pressure. This was startling, but later it cleared enough to reassure me, though Dimitri was so certain that during the first part of our run that day I steered east a lot. We did 25 to 30 miles this day in drift and a temperature of − 28°.

By now I was becoming really alarmed and anxious about Dimitri, who seemed to be getting much worse, and to be able to do less and less. Sitting on a sledge the next

[1] My own diary.

day with a head wind and the temperature – 30° was cold. The land was clear when we turned out and I could see that we must be far outside our course, but almost immediately it became foggy. We made in towards the land a good deal, and made a good run, but owing to the sledge-meter being useless and the bad weather generally during the last few days, I had a very hazy idea indeed where we were when we camped, having been steering for some time by the faint gleam of the sun through the mist. Just after camping Dimitri suddenly pointed to a black spot which seemed to wave to and fro: we decided that it was the flag of the derelict motor near Corner Camp which up to that time I thought was ten to fifteen miles away: this was a great relief, and we debated packing up again and going to it, but decided to stay where we were.

It was fairly clear on the morning of March 14, which was lucky, for it was now obvious that we were miles from Corner Camp and much too near the land. The flag we had seen must have been a miraged piece of pressure, and it was providential that we had not made for it, and found worse trouble than we actually experienced. Try all I could that morning, my team, which was leading, insisted on edging westwards. At last I saw what I thought was a cairn, but found out just in time that it was a haycock or mound of ice formed by pressure: by its side was a large open crevasse, of which about fifty yards of snow-bridge had fallen in. For several miles we knew that we were crossing big crevasses by the hollow sound, and it was with considerable relief that I sighted the motor and then Corner Camp some two or three miles to the east of us. "Dimitri had left his Alpine rope there, and also I should have liked to have brought in Evans' sledge, but it would have meant about five miles extra, and I left it. I hope Scott, finding no note, will not think we are lost." [1]

Dimitri seemed to be getting worse, and we pushed on until we camped that night only fifteen miles from Hut Point. My main anxiety was whether the sea-ice between us and Hut Point was in, because I felt that the job of get-

[1] My own diary.

ting the teams up on to the Peninsula and along it and down the other side would be almost more than we could do: there was an ominous open-water sky ahead.

On March 15 we were held up all day by a strong blizzard. But by 8 A.M. the next morning we could see just the outline of White Island. I was very anxious, for Dimitri said that he had nearly fainted, and I felt that we must get on somehow, and chance the sea-ice being in. He stayed inside the tent as long as possible, and my spirits rose as the land began to clear all round while I was packing up both sledges. From Safety Camp the mirage at the edge of the Barrier was alarming, but as we approached the edge to my very great relief I found that the sea-ice was still in, and that what we had taken for frost smoke was only drift over Cape Armitage.

Pushing into the drift round the corner I found Atkinson on the sea-ice, and Keohane in the hut behind. In a few minutes we had the gist of one another's news. The ship had made attempt after attempt to reach Campbell and his five men, but they had not been taken off from Evans Coves when she finally left McMurdo Sound on March 4: she would make another effort on her way to New Zealand. Evans was better and was being taken home. Meanwhile there were four of us at Hut Point and we could not communicate with our companions at Cape Evans until the Sound froze over, for the open sea was washing the feet of Vince's Cross.

We were not unduly alarmed about the Polar Party at present, but began to make arrangements for further sledging if necessary. It was useless to think of taking the dogs again for they were thoroughly done. The mules and the new dogs were at Cape Evans. "In four or five days Atkinson wishes to start South again to see what we can do man-hauling, if the Polar Party is not in. I agree with him that to try and go west to meet Campbell is useless just now. If we can go north, they can come south, and to put two parties there on the new sea-ice is to double the risk."

"*March* 17. A blizzard day but only about force 5-6. I

think they will have been able to travel all right on the Barrier. Atkinson thinks of starting on the 22nd: my view is that allowing three weeks and four days for the Summit, and ten days for being hung up by weather, we can give them five weeks after the Last Return Party (*i.e.* to March 26) to get in, having been quite safe and sound all the way. We feel anxious now, but I do not think there is need for alarm till then, and they might get in well after that, and be all right.

"Now our only real chance of finding them, if we go out, is from here to ten miles south of Corner Camp. After that we shall do all we can, but it would be no good, because there is no very definite route. Therefore I would start out on March 27, when we would travel that part with most chance of meeting them there if they have any trouble. I have put this to Atkinson and will willingly do what he decides. I am feeling pretty done up, and have rested. The prospect of what will be a hard journey, feeling as I do, is rather bad. I don't think there is really cause for alarm."

"*March* 18 *and* 19. We are very anxious, though the Pole Party could not be in yet. Also I am very done, and more so than I at first thought: I am afraid it is a bit doubtful whether I can get out again yet, but to-day I feel better and have been for a short walk. I am taking all the rest I can."

"*March* 20. Last night a very strong blizzard blew, wind force 9 and big snowfall and drift. This morning the doors and windows are all drifted up, and we could hardly get out: a lot of snow had got inside the hut also: I was feeling rotten, and thought that to go out and clear the window and door would do me good. This I did, but came back in a big squall, passing Atkinson as I came in. Then I felt myself going faint, and remember pushing the door to get in if possible. I knew no more until I came to on the floor just inside the door, having broken some tendons in my right hand in falling." [1]

Two days afterwards the dogs sang at breakfast-time: they often did this when a party was approaching, even

[1] My own diary.

when it was still far away, and they had done so when Crean came in on his walk from Corner Camp. We were cheered by the noise. But no party arrived, and the singing of the dogs was explained later by some seal appearing on the new ice in Arrival Bay. Atkinson decided to go out on to the Barrier man-hauling with Keohane on the 26th. It was obvious that I could not go with them: he told me afterwards that when I came in with the dog-teams he was sure I could not go out again.

"*March* 25. The wind came away yesterday evening, first S.W. and then S.E. but not bad, though very thick. It was a surprise to find we could see the Western Mountains this morning, and I believe it has been a good day on the Barrier, though it is still blowing with low drift this evening. We are now on the days when I expect the Polar Party in: pray God I may be right. Atkinson and I look at one another, and he looks, and I feel, quite haggard with anxiety. He says he does not think they have scurvy. We both, I think, feel quite comfortable, in comparison, about Campbell: he only wants to exercise care, and his great care was almost a byword on the ship. They are fresh and they have plenty of seal.[1] He discussed with Pennell both the possibility of shipwreck and that of the ship being unable to get to him, and for this reason landed an extra month's rations as a depôt; also he contemplated the idea of living on seal. He knows of the Butter Point Depôt, and knows that a party has been sledging in that neighbourhood: though he does not know of the depôts they left at Cape Roberts and Cape Bernacchi, they are right out on the Points and Taylor says he could not miss them on his way down the coast." [2]

This day Atkinson thought he saw Campbell's party coming in, and the next day Keohane and Dimitri came in great excitement and said they could see them, and we were out on the Point and on the sea-ice in the drift for quite a long time. "Last night we had turned in about two hours when five or six knocks were hit on the little

[1] As a matter of fact this was not the case.
[2] My own diary.

window over our heads. Atkinson shouted 'Hullo!' and cried, 'Cherry, they're in.' Keohane said, 'Who's cook?' Some one lit a candle and left it in the far corner of the hut to give them light, and we all rushed out. But there was no one there. It was the nearest approach to ghost work that I have ever heard, and it must have been a dog which sleeps in that window. He must have shaken himself, hitting the window with his tail. Atkinson thought he heard footsteps!"[1]

On Wednesday, March 27, Atkinson started out on to the Barrier with one companion, Keohane. During the whole of this trip the temperatures were low, and both men obtained but little sleep, finding of course that a tent occupied by two men only is a very cold place. The first two days they made nine miles each day, on March 29 they pushed on in thick weather for eleven miles, when the weather cleared enough to show them that they had got into the White Island pressure. On March 30 they reached a point south of Corner Camp, when "taking into consideration the weather, and temperatures, and the time of the year, and the hopelessness of finding the party except at any definite point like a depôt, I decided to return from here. We depôted the major portion of a week's provisions to enable them to communicate with Hut Point in case they should reach this point. At this date in my own mind I was morally certain that the party had perished, and in fact on March 29 Captain Scott, 11 miles south of One Ton Depôt, made the last entry in his diary."[2]

"They arrived back on April 1. Yesterday evening at 6.30 P.M. Atkinson and Keohane arrived. It was pretty thick here and blowing too, but they had had a fair day on the Barrier. They had been out to Corner Camp and eight miles farther. Their bags were bad, their clothes very bad after six days: they must have had minus forties constantly. It is a moral certainty that to go farther south would serve no purpose, and for two men would be a useless risk. They did quite right to come back. They are much in want of

[1] My own diary.
[2] Atkinson in *Scott's Last Expedition*, vol. ii. p. 309.

sleep, poor devils, and I do hope Atkinson will allow himself to rest: he looks as though he might knock up. Keohane did well, and is very fit. They came in over fifteen miles yesterday, and have brought in the sledge of the Second Return Party, the one they took out being very heavy pulling. They had no day on which they could not travel. Here it has been blowing and drifting half the time he has been absent," and a few days later, "We have got to face it now. The Pole Party will not in all probability ever get back. And there is no more that we can do. The next step must be to get to Cape Evans as soon as it is possible. There are fresh men there: at any rate fresh compared to us."[1]

Atkinson was the senior officer left, and unless Campbell and his party came in, the command of the Main Party devolved upon him. It was not a position which any one could envy even if he had been fresh and fit. Amidst all his anxieties and responsibilities he looked after me with the greatest patience and care. I was so weak that sometimes I could only keep on my legs with difficulty: the glands of my throat were swollen so that I could hardly speak or swallow: my heart was strained and I had considerable pain. At such a time I was only a nuisance, but nothing could have exceeded his kindness and his skill with the few drugs which we possessed.

Again and again in these days some one would see one or other of the missing parties coming in. It always proved to be mirage, a seal or pressure or I do not know what, but never could we quite persuade ourselves that these excitements might not have something in them, and every time hope sprang up anew. Meanwhile the matter of serious importance was the state of the ice in the bays between us and Cape Evans: we *must* get help. All the ice in the middle of the Sound was swept out by the winds of March 30 to April 2, and on the following day Atkinson climbed Arrival Heights to see how the remaining ice looked. The view over the Sound from here is shown

[1] My own diary.

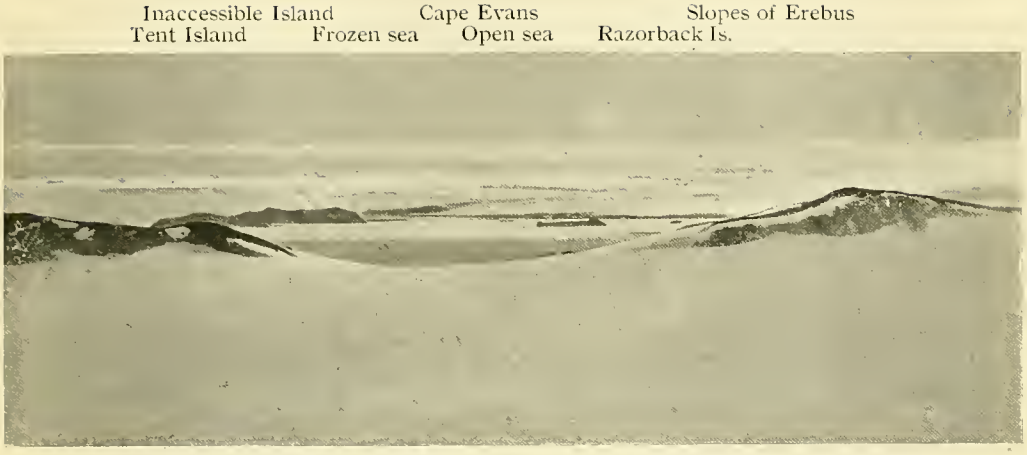
in the frontispiece to this book. "The ice in the two bays to Cape Evans is quite new—formed this morning, I suppose, with the rest that is in the Sound. There are open leads between Glacier Tongue and Cape Evans, inside the line joining the ends of the two. There is a big berg in between Glacier Tongue and the Islands, and also a flat one off Cape Evans."[1]

We had some good freezing days after this, and on April 5 "we tried the ice this afternoon. It is naturally slushy and salt, but some hundred yards from the old ice it is six inches thick: probably it averages about this thickness all over the Sound."[2] Then we had a hard blizzard, on the fourth day of which it was possible to get up the Heights again and see for some distance. As far as could be judged the ice in the two bays had remained firm: these bays are those formed on either side of Glacier Tongue, by the Hut Point Peninsula on the south, and by Cape Evans and the islands on the north.

On April 10 Atkinson, Keohane and Dimitri started for Cape Evans, meaning to travel along the Peninsula to the Hutton Cliffs, and thence to cross the sea-ice in these bays, if it proved to be practicable. The amount of daylight was now very restricted, and the sun would disappear for the winter a week hence. Arrived at the Hutton Cliffs, where it was blowing as usual, they lost no time in lowering themselves and their sledge on to the sea-ice, and were then pleasantly surprised to find how slippery it was. "We set sail before a strong following breeze and, all sitting on the sledge, had reached the Glacier Tongue in twenty minutes. We clambered over the Tongue, and, our luck and the breeze still holding, we reached Cape Evans, completing the last seven miles, all sitting on the sledge, in an hour."

"There I called together all the members and explained the situation, telling them what had been done, and what I then proposed to do; also asking them for their advice in this trying time. The opinion was almost unanimous that all that was possible had been already done.

[1] My own diary. [2] *Ibid.*



CAPE EVANS FROM ARRIVAL HEIGHTS

CAPE ROYDS FROM CAPE BARNE

Owing to the lateness of the year, and the likelihood of our being unable to make our way up the coast to Campbell, one or two members suggested that another journey might be made to Corner Camp. Knowing the conditions which had lately prevailed on the Barrier, I took it upon myself to decide the uselessness of this." [1]

All was well at Cape Evans. Winds and temperatures had both been high, the latter being in marked contrast to the low temperatures we had experienced at Hut Point, which averaged as much as 15° lower than those that were recorded in the previous year. The seven mules were well, but three of the new dogs had died: we were always being troubled by that mysterious disease.

Before she left for New Zealand the following members of our company joined the ship: Simpson, who had to return to his work in India; Griffith Taylor, who had been lent to us by the Australian Government for only one year; Ponting, whose photographic work was done; Day, whose work with the motors was done; Meares, who was recalled by family affairs; Forde, whose hand had never recovered the effects of frost-bite during the spring; Clissold, who fell off a berg and concussed himself; and Anton, whose work with the ponies was done. Lieutenant Evans was invalided home.

Archer had been landed to take Clissold's place as cook; another seaman, Williamson, was landed to take Forde's place, and of our sledging companions he was the only fresh man. Wright was probably the most fit after him, and otherwise we had no one who, under ordinary circumstances, would have been considered fit to go out sledging again this season, especially at a time when the sun was just leaving us for the winter. We were sledged out.

The next few days were occupied in making preparations for a further sledge journey, and on April 13 a party started to return to Hut Point by the Hutton Cliffs. Atkinson, Wright, Keohane and Williamson were to try and sledge up the western coast to help Campbell: Gran and Dimitri were to stay with me at Hut Point. The surface of

[1] Atkinson in *Scott's Last Expedition*, vol. ii. p. 31.

the sea-ice was now extremely slushy and bad for pulling; the ice had begun to extrude its salt. A blizzard started in their faces, and they ran for shelter to the lee of Little Razorback Island. The weather clearing they pushed on to the Glacier Tongue, and camped there for the night somewhat frost-bitten. Some difficulty was experienced the next morning in climbing the ice-cliff on to the Peninsula, but Atkinson, using his knife as a purchase, and the sledge held at arm's-length by four men as a ladder, succeeded eventually in getting a foothold.

Meanwhile I was left alone at Hut Point, where blizzards raged periodically with the usual creakings and groanings of the old hut. Foolishly I accompanied my companions, when they started for Cape Evans, as far as the bottom of Ski Slope. When I left them I found I could not keep my feet on the slippery snow and ice patches, and I had several nasty falls, in one of which I gave my shoulder a twist. It was this shaking combined with the rather desperate conditions which caused a more acute state of illness and sickness than I had experienced for some time. Some of those days I remained alone at Hut Point I was too weak to do more than crawl on my hands and knees about the hut. I had to get blubber from the door to feed the fire, and chop up seal-meat to eat, to cook, and to tend the dogs, some of whom were loose, while most of them were tied in the verandah, or between the hut door and Vince's Cross. The hut was bitterly cold with only one man in it: had there not been some morphia among the stores brought down from Cape Evans I do not know what I should have done.

The dogs realized that they could take liberties which they would not have dared to do in different circumstances. They whined and growled, and squabbled amongst themselves all the time, day and night. Seven or eight times one day I crawled across the floor to try and lay my hands upon one dog who was the ringleader. I was sure it was Dyk, but never detected him in the act, and though I thrashed him with difficulty as a speculation, the result was not encouraging. I would willingly have killed the lot of them

just then, I am ashamed to say. I lay in my sleeping-bag with the floor of the hut falling from me, or its walls disappearing in the distance and coming back: and roused myself at intervals to feed blubber to the stove. I felt as though I had been delivered out of hell when the relief party arrived on the night of April 14. I had been alone four days, and I think a few more days would have sent me off my head. Not the least welcome of the things they had brought me were my letters, copies of the Weekly Times, a pair of felt shoes and a comb!

Atkinson's plan was to start on April 7 over the old sea-ice which lay to the south and south-west of us: he was to take with him Wright, Keohane and Williamson, and they wanted to reach Butter Point, and thence to sledge up the western coast. If the sea-ice was in, and Campbell was sledging down upon it, they hoped to meet him and might be of the greatest assistance to him. Even if they did not meet him they could mark more obviously certain depôts, of which he had no knowledge, left by our own geological parties on the route he must follow. As I have already mentioned, these were on Cape Roberts, off Granite Harbour, and on Cape Bernacchi, north of New Harbour: there was also a depôt at Butter Point, but Campbell already knew of this. They could also leave instructions to this effect at points where he would be likely to see them. There was no question that there was grave risk in this journey. Not only was the winter approaching, and the daylight limited, but the sea-ice over which they must march was most dangerous. Sea-ice is always forming and being blown out to sea, or just floating away on the tide at this time of year. The amount of old ice which had remained during the summer was certain to be limited: the new ice was thin and might take them out with it at any time. However, what could be done had to be done.

Before they left certain signals by means of rockets and Véry lights were arranged, to be sent up by us at Hut Point if Campbell arrived: signals had also been arranged between Hut Point and Cape Evans in view of certain

events. We did not have, but I think we ought to have had, some form of portable heliograph for communications between Hut Point and Cape Evans when the sun was up, and some kind of lamp signal apparatus to use during the winter.

They started at 10.30 A.M. on Wednesday, April 17. The sun was now only just peeping over the northern horizon at mid-day, and would disappear entirely in six more days, though of course there was a long twilight as yet. For fresh men on old sea-ice it would not have been an easy venture: for worn-out men on a coast where the ice was probably freezing and blowing out at odd times it was very brave.

They had hard pulling their first two days, and the minimum temperature for the corresponding nights was $-43°$ and $-45°$. Consequently they soon began to be iced up. On the other hand they found old sea-ice and made good some 25 miles, camping on the evening of the 18th about four miles from the Eskers. Next morning they had to venture upon newly frozen ice, and a blizzard wind was blowing. They crossed the four miles from their night camp to the Eskers, glad enough to reach land the other side without the ice going to sea with them. They then turned towards the Butter Point Depôt, but were compelled to camp owing to the blizzard which came on with full force. The rise in temperature to zero caused a general thaw of sleeping-bags and clothing which dried but little when the sun had no power. On the following morning they reached the Butter Point Depôt, which they found with difficulty, for there was no flag standing. Even as they struck their camp they saw the ice to the north of them breaking up and going out to sea. There was nothing to do but to turn back, for neither could they go north to Campbell nor could Campbell come south to them. Wright now told Atkinson how much he had been opposed to this journey all along: "he had come on this trip fully believing that there was every possibility of the party being lost, but had never demurred and never offered a contrary opinion, and one cannot be thankful enough to

such men."[1] They made up the Butter Point Depôt, marked it as well as they could in case Campbell should arrive there, and left two weeks' provisions for him. They could do no more.

They got back to the Eskers that same day and anxiously awaited the twilight of the morning to reveal the state of the new sea-ice which they had crossed on their outward journey. To their joy some of it remained and they started to do the four miles between them and the old sea-ice. For two miles they ran with the sail set: then they had a hard pull, and some Emperor penguins whom they could see led them to suppose that there was open water ahead. But they got through all right, and did ten miles for the day. On Monday 22, "blizzard in morning, so started late, and made for end of Pinnacled Ice. We found our little bay of sea-ice all gone out. Luckily there was a sort of ice-foot around the Pinnacled Ice and we completed seven miles and got through."[2]

Tuesday, April 23. "Atkinson and his party got in about 7 P.M. after a long pull all day in very bad weather. They are just in the state of a party which has been out on a very cold spring journey: clothes and sleeping-bags very wet, sweaters, pyjama coats and so forth full of snow. Atkinson looks quite done up, his cheeks are fallen in and his throat shows thin. Wright is also a good deal done up, and the whole party has evidently had little sleep. They have had a difficult and dangerous trip, and it is a good thing they are in, and they are fortunate to have had no mishaps, for the sea-ice is constantly going out over there, and when they were on it they never knew that they might not find themselves cut off from the shore. Big leads were constantly opening, even in ice over a foot thick and with little wind. But even if the ice had been in I do not believe that they could have gone many days."[3]

That same day the sun appeared for the last time for four months.

April 28 seemed to be a quite good day when we woke,

[1] Atkinson in *Scott's Last Expedition*, vol. ii. p. 314.
[2] Atkinson's diary. [3] My own diary.

and Wright, Keohane and Gran started back for Cape Evans before 10 A.M. We could then see the outline of Inaccessible Island, and the ice in the Sound looked fairly firm. So they determined to go by the way of the sea-ice under Castle Rock instead of going along the Peninsula to the Hutton Cliffs. Soon after they started it came up thick, and by 11.30 it was blowing a mild blizzard with a low temperature. We felt considerable anxiety, especially when a full blizzard set in with a temperature down to −31°, and we could not see how the ice was standing it. Two days later it cleared, and that night a flare was lit at Cape Evans at a pre-arranged time, by which signal we knew that they had arrived safely. We heard afterwards that when it came up thick they decided to follow the land which was the only thing that they could see. They soon found that the ice was not nearly so good as was supposed: there were open pools of water, and some of the ice was moving up and down with their weight as they crossed it: Gran put his foot in. Then Wright went ahead with the Alpine rope, the ice being blue, the pulling easy, and the wind force 4-5. As far as Turtleback Island the ice was newly frozen, but after that they knew they were on oldish ice. They were lost on Cape Evans in the blizzard for some time, but eventually found the hut safely. One of the lessons of this expedition is that too little care was taken in travelling on sea-ice.

Atkinson, Dimitri and I left for Cape Evans with the two dog-teams on May 1. Directly we started it was evident that the surface was very bad: even the ice near Hut Point, which had been frozen for a long time, was hard pulling for the dogs, and when after less than a mile we got on to ice which had frozen quite lately the sledges were running on snow which in turn lay on salt sleet. It seemed a long time before we got abreast of Castle Rock, following close along the land for the weather was very thick: when we started we could just see the outline of Inaccessible Island, but by now the horizon was lost in the dusk and haze. We decided to push on to Turtleback Island and go over Glacier Tongue in order to get on to the older ice

as soon as possible. The dogs began to get very done: Manuki Noogis, who had been harnessed in as leader (for Rabchick had deserted in the night), gave in completely, lay down and refused to be persuaded to go on: we had to cast him off and hope that he would follow. After a time Turtleback Island was visible in the gloom, but it was all we could do, pushing and pulling the sledges to help the dogs, to get them so far. We were now on the older ice: our way was easier and we reached Cape Evans without further incident. We found Rabchick on arrival, but no Manuki Noogis, who never reappeared.

As we neared the Cape Atkinson turned to me: "Would you go for Campbell or the Polar Party next year?" he said. "Campbell," I answered: just then it seemed to me unthinkable that we should leave live men to search for those who were dead.

CHAPTER XIV

THE LAST WINTER

Ordinary people snuggle up to God as a lost leveret in a freezing wilderness might snuggle up to a Siberian tiger. . . .—H. G. Wells.

(I.) 5 *men dead.*

Scott
Wilson
Bowers
Oates
Seaman Evans

(II.) 9 *men gone home.*

Lieut. Evans
Simpson
Meares
Taylor
Ponting
Day
Forde
Clissold
Anton

(III.) 2 *men landed.*

Archer
Williamson

(IV.) 13 *men at Cape Evans for third year.*

Atkinson
Cherry-Garrard
Wright
Debenham
Gran
Nelson
Lashly
Crean
Keohane
Dimitri
Hooper
Williamson
Archer

A quite disproportionately small part of Scott's Last Expedition was given to Atkinson's account of the last and worst year any of us survivors spent: some one should have compelled him to write, for he will not do so if he can help it. The problems which presented themselves were unique in the history of Arctic travel, the weather conditions which had to be faced during this last winter were such as had never been met in McMurdo Sound! The sledging personnel had lately undergone journeys, in one case no less than four journeys, of major importance, until they were absolutely worn out. The successful issue of the party was a triumph of good management and good fellowship. The saving clause was that as regards hut, food, heat, clothing and the domestic life generally we were splendidly found. To the north of us, some hundreds of miles away,

Campbell's party of six men must be fighting for their lives against these same conditions, or worse—unless indeed they had already perished on their way south. We knew they must be in desperate plight, but probably they were alive: the point in their favour was that they were fresh men. To the south of us, anywhere between us and the Pole, were five men. We knew *they* must be dead.

The immediate problem which presented itself was how best to use the resources which were left to us. Our numbers were much reduced. Nine men had gone home before any hint of tragedy reached them. Two men had been landed from the ship. We were thirteen men for this last year. Of these thirteen it was almost certain that Debenham would be unable to go out sledging again owing to an injury to his knee: Archer had come to cook and not to sledge: and it was also doubtful about myself. As a matter of fact our sledging numbers for the last summer totalled eleven, five officers and six men.

We were well provided with transport, having the seven mules sent down by the Indian Government, which were excellent animals, as well as our original two dog-teams: the additional dogs brought down by the ship were with two exceptions of no real sledging value. Our dog-teams had, however, already travelled some 1 500 miles on the Barrier alone, not counting the work they had done between Hut Point and Cape Evans; and, though we did not realize it at this time, they were sick of it and never worked again with that dash which we had come to expect of them.

The first thing which we settled about the winter which lay ahead of us was that, so far as possible, everything should go on as usual. The scientific work must of course be continued, and there were the dogs and mules to be looked after: a night-watch to be kept and the meteorological observations and auroral notes to be taken. Owing to our reduced numbers we should need the help of the seamen for this purpose. We were also to bring out another volume of the South Polar Times on Mid-winter Day. The importance of not allowing any sense of depression to become a part of the atmosphere of our life was

clear to all. This was all the more necessary when, as we shall see, the constant blizzards confined us week after week to our hut. Even when we did get a fine day we were almost entirely confined to the rocky cape for our exercise and walks. When there was sea-ice it was most unsafe.

Atkinson was in command: in addition, he and Dimitri took over the care of the dogs. Many of these, both those which had been out sledging and those just arrived, were in a very poor state, and a dog hospital was soon built. At this date we had 24 dogs left from the last year, and 11 dogs brought down recently by the ship: three of the new dogs had already died. Lashly was in charge of the seven mules, which were allotted to seven men for exercise: Nelson was to continue his marine biological work: Wright was to be meteorologist as well as chemist and physicist: Gran was in charge of stores, and would help Wright in the meteorological observations: Debenham was geologist and photographer. I was ordered to take a long rest, but could do the zoological work, the South Polar Times, and keep the Official Account of the Expedition from day to day. Crean was in charge of sledging stores and equipment. Archer was cook. Hooper, our domestic, took over in addition the working of the acetylene plant. There was plenty of work for our other two seamen, Keohane and Williamson, in the daily life of the camp and in preparations for the sledging season to come.

The blizzard which threatened us all the way from Hut Point on May 1 broke soon after we got in. The ice in North Bay, which had been frozen for some time, was taken out on the first day of this blizzard, with the exception of a small strip running close along the shore. The rest followed the next afternoon, when the wind was still rising, and blew in the gusts up to 89 miles an hour. The curious thing was that all this time the air had been quite clear.

This was the second day of the blizzard. The wind continued in violence as the night wore on, and it began to snow, becoming very thick. From 3 A.M. to 4 A.M. the wind was so strong that there was a continuous rattle of

sand and stones up against the wall of the hut. The greater part of the time the anemometer head was choked by the drifting snow, and Debenham, whose night-watch it was, had a bad time in clearing it at 4 A.M. During the period when it was working it registered a gust of over 91 miles an hour. While it was not working there came a gust which woke most people up, and which was a far more powerful one, making a regular hail of stones against the wall. The next morning the wind was found to be averaging 104 miles an hour when the anemometer on the hill was checked for three minutes. Later it was averaging 78 miles an hour. This blizzard continued to rage all this day and the next, but on May 6, which was one of those clear beautiful days when it is hard to believe that it can ever blow again, we could see something of the damage to the sea-ice. The centre of the Sound was clear of ice, and the open water stretched to the S.W. of us as far back as Tent Island. We were to have many worse blizzards during this winter, but this particular blow was important because it came at a critical time in the freezing over of the sea, and, once it had been dispersed, the winds of the future never allowed the ice to form again sufficiently thick to withstand the wind forces which obtained.

Thus I find in my diary of May 8: "Up to the present we have never considered the possibility of the sea in this neighbourhood, and the Sound out to the west of us, not freezing over permanently in the winter. But here there is still open water, and it seems quite possible that there may not be any permanent freezing this year, at any rate to the north of Inaccessible Island and this cape. Though North Bay is now frozen over, the ice in it was blown away during the night, and, having been blown back again, is now only joined to the ice-foot by newly frozen ice."

During this winter the ice formed in North Bay was constantly moving away from the ice-foot, quite independently of wind. I watched it carefully as far as it was possible to do so in the dark. Sometimes at any rate the southern side of the sea-ice moved out not only northwards from the land, but also slightly westwards from the glacier

face. To the north-east the ice was sometimes pressed closely up against the glacier. It seemed that the whole sheet was subject to a screw movement, the origin of which was somewhere out by Inaccessible Island. The result was that we often had a series of leads of newly frozen ice stretching out for some forty yards to an older piece of ice, each lead being of a different age. It was an interesting study in the formation of sea-ice, covered at times by very beautiful ice-flowers. But it was dangerous for the dogs, who sometimes did not realize that these leads were not strong enough to bear them. Vaida went in one day, but managed to scramble out on the far side. He was induced to return to the land with difficulty, just before the whole sheet of ice upon which he stood floated out to sea. Noogis, Dimitri's good leader, wandered away several times during the winter: once at any rate he seems to have been carried off on a piece of ice, and to have managed to swim to land, for when he arrived in camp his coat was full of icy slush : finally he disappeared altogether, all search for him was in vain, and we never found out what had happened.

Vaida was a short-tempered strong animal, who must have about doubled his weight since we came in from One Ton, and he became quite a house-dog this winter, waiting at the door to be patted by men as they went out, and coming in sometimes during the night-watch. But he did not like to be turned out in the morning, and for my part I did not like the job, for he could prove very nasty. We allowed a good many of the dogs to be loose this year, and sometimes, when standing quietly upon a rock on the cape, three or four of the dogs passed like shadows in the darkness, busily hunting the ice-foot for seals : this was the trouble of giving them their freedom, and I regret to say we found many carcasses of seal and Emperor penguins. There was one new dog, Lion, who accompanied me sometimes to the top of the Ramp to see how the ice lay out in the Sound. He seemed as interested in it as I was, and while I was using night-glasses would sit and gaze out over the sea which according to its age lay white or black

E. A. Wilson, del.

CAPE EVANS IN WINTER

at our feet. Of course we had a dog called Peary, and another one called Cooke. Peary was killed on the Barrier because he would not pull. Cooke, however, was still with us, and seemed to have been ostracized by his fellows, a position which in some lop-sided way he enjoyed. Loose dogs chased him at sight, and when Cooke appeared, and others were about, a regular steeplechase started. He also came up the Ramp with me one day: half-way up he suddenly turned and fled for the hut as hard as he could go: three other dogs came round the rocks in full chase, and they all gave the impression of thoroughly enjoying themselves.

The question of what ought to be done for the best during the coming sledging season must have been in the minds of all of us. Which of the two missing parties were we to try and find? A winter journey to relieve Campbell and his five men was out of the question. I doubt the possibility of such a journey to Evans Coves with fit men: to us at any rate it was unthinkable. Also if we could do the double journey up and down, Campbell could certainly do the single journey down. Add to this that there was every sign of open water under the Western Mountains, though this did not influence us much when the decision was made. The problem as it presented itself to us was much as follows:

Campbell's Party *might* have been picked up by the Terra Nova. Pennell meant to have another try to reach him on his way north, and it was probable that the ship would not be able to communicate again with Cape Evans owing to ice: on the other hand it was likely that the ship had *not* been able to relieve him. It also seemed that he could not have travelled down the coast at this time, owing to the state of the sea-ice. The danger to him and his men was primarily during the winter: every day after the winter his danger was lessened. If we started in the end of October to relieve Campbell, estimating the probable date of arrival of the ship, we judged that we could reach him only five or six weeks before the ship relieved him. All the same Campbell and his men might

be alive, and, having lived through the winter, the arrival of help might make the difference between life and death.

On the other hand we knew that the Polar Party must be dead. They might be anywhere between Hut Point and the Pole, drifted over by snow, or lying at the bottom of a crevasse, which seemed the most likely thing to have happened. From the Upper Glacier Depôt in 85° 5′ S. to the Pole, that is the whole distance of the Plateau Journey, we did not know the courses they had steered nor the position of their depôts, for Lieutenant Evans, who brought back the Last Return Party, was invalided home and neither of the seamen who remained of this party knew the courses.

After the experience of both the supporting parties on their way down the Beardmore Glacier, when we all got into frightfully crevassed areas, it was the general opinion that the Polar Party must have fallen down a crevasse ; the weight of five men, as compared with the four men and three men of the other return parties, supported this theory. Lashly was inclined to think they had had scurvy. The true solution never once occurred to us, for they had full rations for a very much longer period of time than, according to their averages to 87° 32′, they were likely to be out.

The first object of the expedition had been the Pole. If some record was not found, their success or failure would for ever remain uncertain. Was it due not only to the men and their relatives, but also to the expedition, to ascertain their fate if possible ?

The chance of finding the remains of the Southern Party did not seem very great. At the same time Scott was strict about leaving notes at depôts, and it seemed likely that he would have left some record at the Upper Glacier Depôt before starting to descend the Beardmore Glacier: it would be interesting to know whether he did so. If we went south we must be prepared to reach this depôt : farther than that, I have explained, we could not track him. On the other hand, if we went south prepared to go to the Upper Glacier Depôt, the number of sledging men necessary, in view of the fact that we had no depôts,

would not allow of our sending a second party to relieve Campbell.

It was with all this in our minds that we sat down one evening in the hut to decide what was to be done. The problem was a hard one. On the one hand we might go south, fail entirely to find any trace of the Polar Party, and while we were fruitlessly travelling all the summer Campbell's men might die for want of help. On the other hand we might go north, to find that Campbell's men were safe, and as a consequence the fate of the Polar Party and the result of their efforts might remain for ever unknown. Were we to forsake men who might be alive to look for those whom we knew were dead?

These were the points put by Atkinson to the meeting of the whole party. He expressed his own conviction that we should go south, and then each member was asked what he thought. No one was for going north: one member only did not vote for going south, and he preferred not to give an opinion. Considering the complexity of the question, I was surprised by this unanimity. We prepared for another Southern Journey.

It is impossible to express and almost impossible to imagine how difficult it was to make this decision. Then we knew nothing: now we know all. And nothing is harder than to realize in the light of facts the doubts which others have experienced in the fog of uncertainty.

Our winter routine worked very smoothly. Inside the hut we had a good deal more room than we needed, but this allowed of certain work being done in its shelter which would otherwise have had to be done outside. For instance we cut a hole through the floor of the dark-room, and sledged in some heavy boulders of kenyte lava: these were frozen solidly into the rock upon which the hut was built by the simple method of pouring hot water over them, and the pedestal so formed was used by Wright for his pendulum observations. I was able to skin a number of birds in the hut; which, incidentally, was a very much colder place in consequence of the reduction in our numbers.

The wind was most turbulent during this winter.

The mean velocity of the wind, in miles per hour, for the month of May was 24.6 m.p.h.; for June 30.9 m.p.h.; and for July 29.5 m.p.h. The percentage of hours when the wind was blowing over fresh gale strength (42 m.p.h. on the Beaufort scale) for the month of May was 24.5, for June 35, and for July 33 per cent of the whole.

These figures speak for themselves: after May we lived surrounded by an atmosphere of raging winds and blinding drift, and the sea at our door was never allowed to freeze permanently.

After the blizzard in the beginning of May which I have already described, the ice round the point of Cape Evans and that in North Bay formed to a considerable thickness. We put a thermometer screen out upon it, and Atkinson started a fish-trap through a hole in it. There was a good deal of competition over this trap: the seamen started a rival one, which was to have been a very large affair, though it narrowed down to a less ambitious business before it was finished. There was a sound of cheering one morning, and Crean came in triumph from his fish-trap with a catch of 25. Atkinson's last catch had numbered one, but the seals had found his fishing-holes: a new hole caught fish until a seal found it. One of these fish, a Tremasome, had a parasitic growth over the dorsal sheath. External parasites are not common in the Antarctic, and this was an interesting find.

On June 1 Dimitri and Hooper went with a team of nine dogs to and from Hut Point, to see if they could find Noogis, the dog which had left us on our return on May 1. There was plenty of food for him to pick up there. No trace of him could be found. The party reported a bad running surface, no pressure in the ice, as was the case the former year, but a large open working crack running from Great Razorback to Tent Island. There were big snowdrifts at Hut Point, as indeed was already the case at Cape Evans. During the first days of June we got down into the minus thirties, and our spirits rose as the thermometer dropped: we wanted permanent sea-ice.

"*Saturday, June* 8. The weather changes since the night before last have been, luckily for us, uncommon. Thursday evening a strong northerly wind started with some drift, and this increased during the night until it blew over forty miles an hour, the temperature being −22°. A strong wind from the north is rare, and generally is the prelude of a blizzard. This northerly wind fell towards morning, and the day was calm and clear, the temperature falling until it was −33° at 4 P.M. The barometer had been abnormally low during the day, being only 28.24 at noon. Then at 8 P.M. with the temperature at −36°, this blizzard broke, and at the same time there was a big upward jump of the barometer, which seemed to mark the beginning of the blizzard much more than the thermometer, which did not rise much. The wind during the night was very high, blowing 72 and 66 miles an hour, for hours at a time, and has not yet shown any sign of diminishing. Now, after lunch, the hut is straining and creaking, while a shower of stones rattles at intervals against it: the drift is generally very heavy."

"*Sunday, June* 9. The temperature has been higher, about zero, during the day, and the blizzard shows no signs of falling yet. The gusts are still of a very high velocity. A large quantity of ice to the north seems to have gone out: at any rate our narrow strip along the front, which is so valuable to us, will probably be permanent now."

"*Monday, June* 10. A most turbulent day. It is very hard to settle down to do anything, read or write, with such a turmoil outside, the hut shaking until we begin to wonder how long it will stand such winds. Most of the time the wind is averaging about sixty miles an hour, but the gusts are far greater, and at times it seems that something must go. Just before lunch I was racking my brains to write an Editorial for the South Polar Times, and had congratulated ourselves on having the sea-ice which is still in North Bay. As we were having lunch Nelson came in and said, 'The thermometers have gone!' All the ice in North Bay has gone. The part immediately next to the shore, which has now been in so long, and which was over

two feet thick, we had considered sure to stay. On it has gone out the North Bay thermometer screen with its instruments, which was placed 400 yards out, the fish-trap, some shovels and a sledge with a crowbar. The gusts were exceptionally strong at lunch, and the ice must have gone out very quickly. There was no sign of it afterwards, though it was not drifting much and we could see some distance. To lose this ice in North Bay is a great disappointment, for it means so much to us here whether we have ice or water at our doors. We are now pretty well confined to the cape both for our own exercise and that of the mules, and in the dark it is very rough walking. But if the ice in South Bay were to follow, it would be a calamity, cutting us off entirely from the south and all sledging next year. Let us hope we shall be spared this."

This blizzard lasted for eight days, up till then the longest blizzard we had experienced: "It died as it had lived, blowing hard to the last, averaging 68 miles an hour from the south, and then 56 miles an hour from the north, finally back to the south, and so to calm. To sit here with no noise of wind whistling in the ventilator, calm and starlight outside, and North Bay freezing over once more, is a very great relief." [1]

It is noteworthy that this clearance of the ice, as also that in the beginning of May, coincided roughly with the maximum declination of the moon, and therefore with a run of spring tides.

It would be tedious to give any detailed account of the winds and drift which followed, night and day. There were few days which did not produce their blizzard, but in contrast the hours of bright starlight were very beautiful. "Walking home over the cape in the darkness this afternoon I saw an eruption of Erebus which, compared with anything we have seen here before, was very big. It looked as though a great mass of flame shot up some thousands of feet into the air, and, as suddenly as it rose, fell again, rising again to about half the height, and then disappearing. There was then a great column of steam rising from the

[1] My own diary.

crater, and probably, so Debenham asserts, it was not a flame which appeared, but the reflection from a big bubble breaking in the crater. Afterwards the smoke cloud stretched away southwards, and we could not see the end of it." [1]

Blizzard followed blizzard, and at the beginning of July we had four days which were the thickest I have ever seen. Generally when you go out into a blizzard the drift is blown from your face and clothes, and though you cannot see your stretched-out hand, especially on a dark winter day, the wind prevents you being smothered. The wind also prevents the land, tents, hut and cases from being covered. But during this blizzard the drift drove at you in such blankets of snow, that your person was immediately blotted out, your face covered and your eyes plugged up. Gran lost himself for some time on the hill when taking the 8 A.M. observations, and Wright had difficulty in getting back from the magnetic cave. Men had narrow escapes of losing themselves, though they were but a few feet from the hut.

When this blizzard cleared the camp was buried, and even on unobstructed surfaces the snowdrifts averaged four feet of additional depth. Two enormous drifts ran down to the sea from either end of the hut. I do not think we ever found some of our stores again, but the larger part we carried up to the higher ground behind us where they remained fairly clear. About this time I began to notice large sheets of anchor ice off the end of Cape Evans, that is to say, ice forming and remaining on the bottom of the open sea. Now also the open water was extending round the cape into the South Bay behind us : but it was too dark to get any reliable idea of the distribution of ice in the Sound. We were afraid that we were cut off from Hut Point, but I do not believe that this was the case; though the open water must have stretched many miles to the south in the middle of the Sound. The days when it was clear enough even to potter about outside the hut were exceptional. God was very angry.

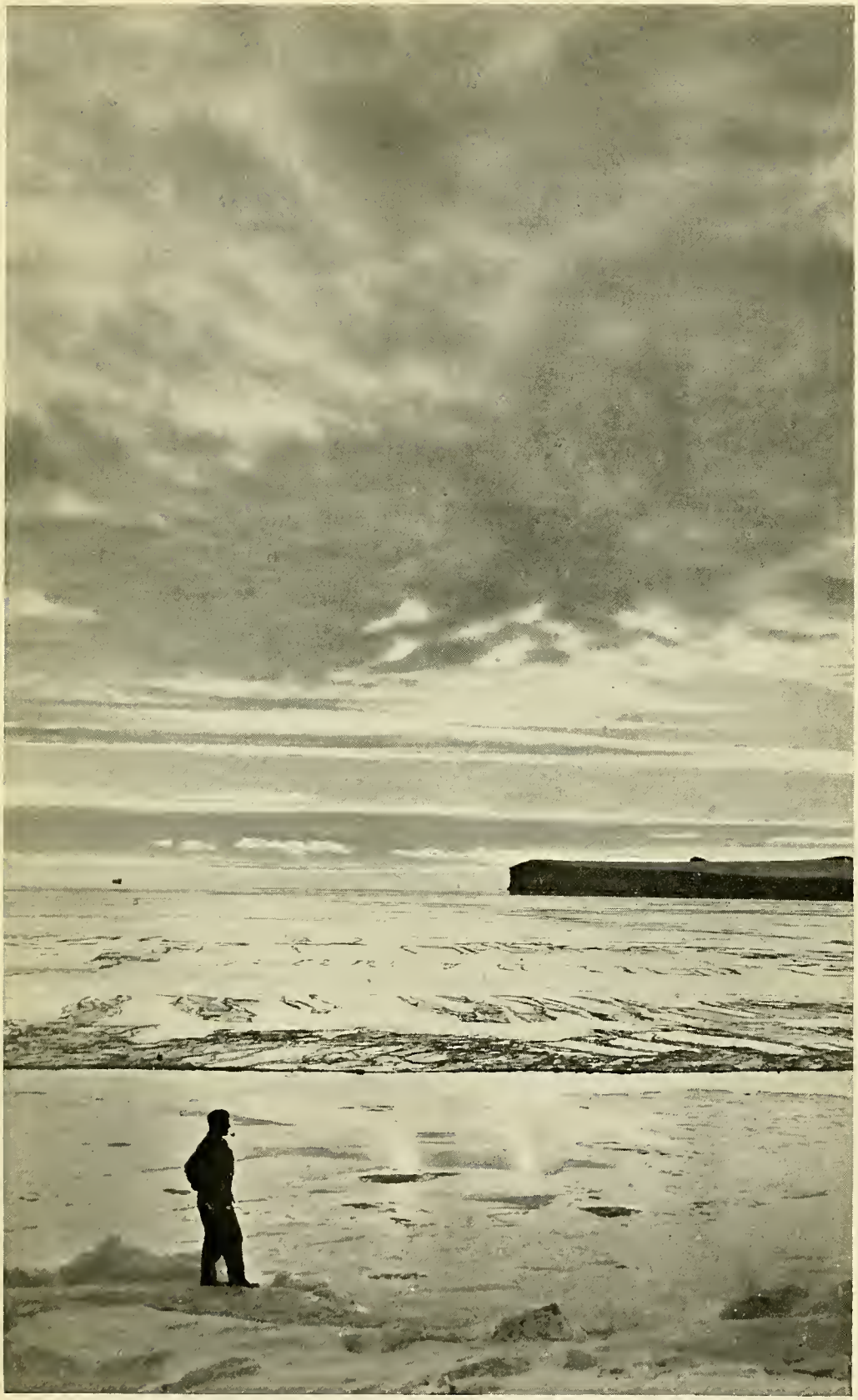
"*Sunday, July* 14. A blizzard during the night, and

[1] My own diary.

after breakfast it was drifting a lot. While we were having service some of the men went over the camp to get ice for water. The sea-ice had been blown out of North Bay, and the men supposed that the sea was open, and would look black, but Crean tells me that they nearly walked over the ice-foot, and, when it cleared later, we saw the sea as white as the ice-foot itself. A strip of ice which was lying out in the Bay last night must have been brought in by the tide, even against a wind of some forty miles an hour. This shows what an influence the tides and currents have in comparison with the winds, for just at this time we are having very big tides. It was blowing and drifting all the morning, and the tide was flowing in, pressing the ice in under the ice-foot to such an extent that later it remained there, though the tide was ebbing and a strong southerly was blowing."[1] Incidentally the bergs which were grounded in our neighbourhood were shifted and broken about considerably by these high winds: also the meteorological screen placed on the Ramp the year before was broken from its upright, which had snapped in the middle, and must have been taken up into the air and so out to sea, for there was no trace of it to be found: Wright lost two doors placed over the entrance to the magnetic cave: when he lifted them they were taken out of his hands by the wind, and disappeared into the air and were never seen again.

So ready was the sea to freeze that there can be little doubt that it already contained large numbers of ice crystals, and time and again I have stood upon the ice-foot watching the tongues of the winds licking up the waters as they roared their way out to sea. Then, with no warning, there would come, suddenly and completely, a lull. And there would be a film of ice, covering the surface of the sea, come so quickly that all you could say was that it was not there before and it was there now. And then down would come the wind again and it was gone. Once when the winter had gone and daylight had returned I stood upon the end of the cape, the air all calm around me, and there, half-a-mile away, a full blizzard was blowing: the islands,

[1] My own diary.



NORTH BAY AND THE BARNE GLACIER

and even the berg between Inaccessible Island and the cape, were totally obscured in the thickest drift: the top of the drift, which was very distinct, thinned to show dimly the crest of Inaccessible Island: Turk's Head was visible and Erebus quite clear. In fact I was just on the edge of a thick blizzard, blowing down the Strait, the side showing as a perpendicular wall about 500 feet high and travelling, I should say, about 40 miles an hour. A roar came out from it of the wind and waves.

The weather conditions were extraordinarily local, as another experience will show. Atkinson and Dimitri were off to Hut Point with the dogs, carrying biscuit and pemmican for the coming Search Journey: I went with them some way, and then left them to place a flag upon the end of Glacier Tongue for surveying purposes. It was clear and bright, and it was easy to get a sketch of the bearings of the islands from this position, which showed how great a portion of the Tongue must have broken off in the autumn of 1911. I anticipated a pleasant walk home, but was somewhat alarmed when heavy wind and drift came down from the direction of the Hutton Cliffs. Wearing spectacles, and being unable to see without them, I managed to steer with difficulty by the sun which still showed dimly through the drift. It was amazing suddenly to walk out of the wall of drift into light airs at Little Razorback Island. One minute it was blowing and drifting hard and I could see almost nothing, the next it was calm, save for little whirlwinds of snow formed by eddies of air drawn in from the north. In another three hundred yards the wind was blowing from the north. On this day Atkinson found wind force 8 and temperature $-17°$ at Hut Point: at Cape Evans the temperature was zero and men were sitting on the rocks and smoking in the sun. Many instances might be given to show how local our weather conditions often were.

There was a morning some time in the middle of the winter when we awoke to one of our usual tearing blizzards. We had had some days of calm, and the ice had frozen sufficiently for the fish-trap to be lowered again.

But that it would not stand much of this wind was obvious, and after breakfast Atkinson stuck out his jaw and said he wasn't going to lose another trap for any dash blizzard. He and Keohane sallied forth on to the ice, lost to our sight immediately in the darkness and drift. They got it, but arrived on the cape in quite a different place, and we were glad to see them back. Soon afterwards the ice blew out.

Much credit is due to the mule leaders that they were able to exercise their animals without hurt. Cape Evans in the dark, strewn with great boulders, with the open sea at your feet, is no easy place to manage a very high-spirited and excitable mule, just out of a warm stable, especially if this is his first outing for several days and the wind is blowing fresh, and you are not sure if your face is frost-bitten, and you are quite sure that your hands are. But the exercise was carried out without mishap. The mules themselves were most anxious to go out, and when Pyaree developed a housemaid's knee and was kept in, she revenged herself upon her more fortunate companions by biting each one hard as it passed her head on its way to and from the door. Gulab was the biggest handful, and Williamson managed him with skill : some of them, especially Lal Khan, were very playful, running round and round their leaders and stopping to paw the ground: Khan Sahib, on the other hand, was bored, yawning continually : it was suggested that he was suffering from polar ennui ! Altogether they reflected the greatest credit upon Lashly, who groomed them every day and took the greatest care of them. They were subject to the most violent fits of jealousy, being much disturbed if a rival got undue attention. The dog Vaida, however, was good friends with them all, going down the line and rubbing noses with them in their stalls.

The food of the mules was based upon that given by Oates to the ponies the year before, and the results were successful.

The accommodation given to the dogs in the Terra Nova on the way south is open to criticism. As the reader may remember, they were chained on the top of the deck

cargo on the main deck, and of course had a horrible time during the gale, and any subsequent bad weather, which did not however last very long. But it was quite impossible to put them anywhere else, for every square inch between decks was so packed that even our personal belongings for more than two years were reduced to one small uniform case. Any seaman will easily understand that to build houses or shelters on deck over and above what we had already was out of the question. As a matter of fact I doubt whether the dogs had a worse time than we during that gale. In good weather at sea, and at all times in the pack, they were comfortable enough. But future explorers might consider whether they can give their dogs more shelter during the winter than we were able to do. Amundsen, whose Winter Quarters were on the Barrier itself, and who experienced lower temperatures and very much less wind than was our lot at Cape Evans, had his dogs in tents, and let them run loose in the camp during the day. Tents would have gone in the winds we experienced, and I have explained that we had no snow in which we could make houses, as was done by Amundsen in the Barrier.

Our more peaceable dogs were allowed to run loose, especially during this last winter, at the beginning of which we also built a dog hospital. We should have liked to loose them all, but if we did so they immediately flew at one another's throats. We might perhaps have let them loose if we had first taken the precaution Amundsen took, and muzzled all of them before doing so. The sport of fighting, so his dogs discovered, lost all its charm when they found they could not taste blood, and they gave it up, and ran about unmuzzled and happy. But the slaughter among the seals and penguins would have been horrible with us, and many dogs might have been carried away on the breaking sea-ice. The tied-up ones lay under the lee of a line of cases, each in his own hole. They curled up quite snugly buried in the snowdrift when blizzards were blowing, and lay exactly in the same way when sledging on the Barrier, the first duty of

the dog-driver after pitching his own tent being to dig holes for each of his dogs. It may be that these conditions are more natural to them than any other, and that they are warmer when covered by the drifted snow than they would be in any unwarmed shelter: but this I doubt. At any rate they throve exceedingly under these rigorous conditions, soon becoming fat and healthy after the hardest sledge journeys, and their sledging record is a very fine one. We could not have built them a hut; as it was, we left our magnetic hut, a far smaller affair, in New Zealand, for there was no room to stow it on the ship. I would not advise housing dogs in a hut built with a lean-to roof as an annexe to the main living-hut, but this would be one way of doing it if you are prepared to stand the noise and smell.

The dog-biscuits, provided by Spratt, weighed 8 oz. each, and their sledging ration was 1½ lbs. a day, given to them after they reached the night camp. We made seal pemmican for them and tried this when sledging, as an occasional variation on biscuit, but they did not thrive on this diet. The oil in the biscuits caused purgation, as also did the pemmican: the fat was partly undigested and the excreta were eaten. The ponies also ate their excreta at times. Certain dogs were confirmed leather eaters, and we carried chains for them: on camping, these dogs were taken out of their canvas and raw-hide harnesses, and attached to the sledge by the chains, care being taken that they could not get at the food on the sledge. When sledging, Amundsen gave his dogs pemmican but I do not know what else: he also fed dog to dog: I do not know whether we could have fed dog to dog, for ours were Siberian dogs which, I am told, will not eat one another. At Amundsen's winter quarters he gave them seal's flesh and blubber one day, and dried fish the next.[1] On the long voyage south in the Fram, he fed his dogs on dried fish, and three times a week gave them a porridge of dried fish, tallow, and maize meal boiled together.[2] At Cape Evans or at Hut Point our dogs were given plenty of biscuit some evenings, and plenty of fresh frozen seal at other times.

[1] See Amundsen, *The South Pole*, vol. i. p. 264.

[2] *Ibid.* vol. i. p. 119.

Our worst trouble with the dogs came from far away—probably from Asia. There are references in Scott's diary to four dogs as attacked by a mysterious disease during our first year in the South : one of these dogs died within two minutes. We lost many more dogs the last year, and Atkinson has given me the following memorandum upon the parasite, a nematode worm, which was discovered later to be the cause of the trouble :

"*Filaria immitis*.—A certain proportion of the dogs became infected with this nematode, and it was the cause of their death, mainly in the second year. It was present at the time the expedition started (1910) all down the Pacific side of Asia and Papua, and there was an examination microscopically of all dogs imported at this time into New Zealand. The secondary host is the mosquito Culex.

"The symptoms varied. The onset was usually with intense pain, during which the animal yelled and groaned : this was cardiac in origin and referable to the presence of the mature form in the beast. There was marked haematuria, and the animals were anaemic from actual loss of haemoglobins. In nearly all cases there was paralysis affecting the hindquarters during the later stages, which tended to spread upwards and finally ended in death.

"The probable place of infection was Vladivostok before the dogs were put on board ship and deported to New Zealand. The only method of coping with the disease is prevention of infection in infected areas. It is probable that the mosquitoes would not bite after the dog's coat had been rubbed with paraffin : or mosquito netting might be placed over the kennels, especially at night time. The larval forms were found microscopically in the blood, and one mature form in the heart."

We were too careful about killing animals. I have explained how Campbell's party was landed at Evans Coves. Some of the party wanted to kill some seals on the off chance of the ship not turning up to relieve them. This was before they were in any way alarmed. But it was decided that life might be taken unnecessarily if they did this—and that winter this party nearly died of starvation. And yet this

country has allowed penguins to be killed by the million every year for Commerce and a farthing's worth of blubber.

We never killed unless it was necessary, and what we had to kill was used to the utmost both for food and for the scientific work in hand. The first Emperor penguin we ever saw at Cape Evans was captured after an exciting chase outside the hut in the middle of a blizzard. He kept us busy for days: the zoologist got a museum skin, showing some variation from the usual coloration, a skeleton, and some useful observation on the digestive glands : the parasitologist got a new tape-worm: we all had a change of diet. Many a pheasant has died for less.

There were plenty of Weddell seal round us this winter, but they kept out of the wind and in the water for the most part. The sea is the warm place of the Antarctic, for the temperature never falls below about 29° Fahr., and a seal which has been lying out on the ice in a minus thirty temperature, and perhaps some wind, must feel, as he slips into the sea, much the same sensations as occur to us when we walk out of a cold English winter day into a heated conservatory. On the other hand, a seaman went out into North Bay to bathe from a boat, in the full sun of a mid-summer day, and he was out almost as soon as he was in. One of the most beautiful sights of this winter was to see the seals, outlined in phosphorescent light, swimming and hunting in the dark water.

We had lectures, but not as many as during the previous winter when they became rather excessive : and we included outside subjects. We read in many a polar book of the depressions and trials of the long polar night ; but thanks to gramophones, pianolas, variety of food, and some study of the needs both of mind and body, we suffered very little from the first year's months of darkness. There is quite a store of novelty in living in the dark : most of us I think thoroughly enjoyed it. But a second winter, with some of your best friends dead, and others in great difficulties, perhaps dying, when all is unknown and every one is sledged to a standstill, and blizzards blow all day and all night, is a ghastly experience. This year there

was not one of our company who did not welcome the return of the sun with thankfulness: all the more so since he came back to a land of blizzards and made many of our difficulties more easy to tackle. Those who got little outside exercise were more affected by the darkness than others. This last year, of course, the difficulties of getting sufficient outdoor exercise were much increased. Variety is important to the man who travels in polar regions : at all events those who went away on sledging expeditions stood the life more successfully than those whose duties tied them to the neighbourhood of the hut.

Other things being equal, the men with the greatest store of nervous energy came best through this expedition. Having more imagination, they have a worse time than their more phlegmatic companions ; but they get things done. And when the worst came to the worst, their strength of mind triumphed over their weakness of body. If you want a good polar traveller get a man without too much muscle, with good physical tone, and let his mind be on wires—of steel. And if you can't get both, sacrifice physique and bank on will.

NOTE

A lecture given at this time by Wright on Barrier Surfaces is especially interesting with relation to the Winter Journey and the tragedy of the Polar Party. The general tend of friction set up by a sledge-runner upon snow of ordinary temperature may be called true *sliding* friction : it is probable that the runners melt to an infinitesimal degree the millions of crystal points over which they glide : the sledge is running upon water. Crystals in such temperatures are larger and softer than those encountered in low temperatures. It is now that halos may be seen in the snow, almost reaching to your feet as you pull, and moving forward with you : we steered sometimes by keeping these halos at a certain angle to us. My experience is that the best pulling surface is at an air temperature of about + 17° Fahr. : Wright's experience is that below + 5°

during summer temperatures on the Barrier the surface is fairly good, that between + 5° and + 15° less good, and between + 15° and + 25° best. The worst is from + 25° upwards, the worst of all being round about freezing point.

As the temperature became high the amount of ice melted by this sliding friction was excessive. It was then that we found ice forming upon the runners, often in almost microscopic amounts, but nevertheless causing the sledges to drag seriously. Thus on the Beardmore we took enormous care to keep our runners free from ice, by scraping them at every halt with the back of our knives. This ice is perhaps formed when the runners sink into the snow to an unusual depth, at which the temperature of the snow is sufficiently low to freeze the water previously formed by friction or radiation from the sun on to a dark runner.

In very low temperatures the snow crystals become very small and very hard, so hard that they will scratch the runners. The friction set up by runners in such temperatures may be known as *rolling* friction, and the effect, as experienced by us during the Winter Journey and elsewhere, is much like pulling a sledge over sand. This rolling friction is that of snow crystal against snow crystal.

If the barometer is rising you get flat crystals on the ice, if it is falling you get mirage and a blizzard. When you get mirage the air is actually coming out of the Barrier. Thus far Wright's lecture.

Since we returned I have had a talk with Nansen about the sledge-runners which he recommends to the future explorer. The ideal sledge-runner combines lightness and strength. He tells me that he would always have metal runners in high temperatures in which they will run better than wood. In cold temperatures wood is necessary. Metal is stronger than wood with same weight. He has never used, but he suggests the possible use of, aluminium or magnesium for the metal. And he would also have wooden runners with metal runners attached, to be used alternately, if needed.

The Discovery Expedition used German silver, and it failed : Nansen suggests that the failure was due to the

fact that these runners were fitted at home. The effect of this is that the wood shrinks and the German silver is not quite flat: the fitting should be done on the spot. Nansen did this himself on the Fram, and the result was excellent. [I believe that these Discovery runners were not a continuous strip of metal but were built up in strips, which tore at the points of junction.] Before it is fitted, German silver should be heated red hot and allowed to cool. This makes it more ductile, like lead, and therefore less springy: the metal should be as thin as possible.

As runners melt the crystals and so run on water, metal is unsuitable for cold snow. For low temperatures, therefore, Nansen would have wooden runners under the metal, the metal being taken off when cold conditions obtained. He would choose such wood as is the best conductor of heat. He tried birch wood in the first crossing of Greenland, but would not recommend it as being too easily broken. In the use of oak, ash, maple, and doubtless also hickory, for runners, the rings of growth of the tree should be as far apart as possible: that is to say, they should be fast growing. Ash with narrow rings breaks. There is ash and ash: American ash is no good for this purpose; some Norwegian ash is useful, and some not. Our own sledges with ash runners varied enormously. The runners of a sledge should curve slightly, the centre being nearest to the snow. The runners of ski should curve also slightly, in this case upwards in the centre, *i.e.* from the snow. This is done by the way the wood is cut. Wood always dries with the curve from the heart towards the outside of the tree.

During our last year we had six new Norwegian sledges twelve feet long, brought down by the ship, with tapered runners of hickory which were $3\frac{3}{4}$ inches broad in the fore part and $2\frac{1}{4}$ inches only at the stern. I believe that this was an idea of Scott, who considered that the broad runner in front would press down a path for the tapered part which followed, the total area of friction being much less. We took one of them into South Bay one morning and tried it against an ordinary sledge, putting 490 lbs. on each of them. The surface included fairly soft as well as harder and more

rubbly going. There was no difference of opinion that the sledge with the tapered runners pulled easier, and later we used these sledges on the Barrier with great success.

If some instrument could be devised to test sledges in this way it would be of very great service. No team of men can make an exact estimate of the run of their own sledge, let alone the sledge which your pony or your dogs are pulling. Yet sledges vary enormously, and it would be an excellent thing for a leader to be able to test his sledges before buying them, and also to be able to pick out the best for his more important sledge journeys. I believe it can be done by attaching some kind of balance between the sledge and the men pulling it.

Other points mentioned by Nansen are as follows:

Tarred ski are good: the snow does not stick so much. [This probably refers to the Norwegian compound known as Fahrt.] But he does not recommend tarred runners for sledges. Having had experience of a tent of Chinese silk which would go into his pocket but was very cold, he recommends a double tent, the inner lining being detached so that ice could be shaken from both coverings. He suggests the possibility of a woollen lining being warmer than cotton or silk or linen. I am, however, of opinion that wool would collect more moisture from the cooker, and it certainly would be far more difficult to shake off the ice. For four men he would have two two-men sleeping-bags and a central pole coming down between them, and the floor-cloth made in one piece with the tent. For three men a three-man sleeping-bag: *e.g.* for such a journey as our Winter Journey. He would not brush rime, formed upon the tent by the steam from the cooker and breath, from the inside of tent before striking camp. The more of it the warmer. He considers that two- or three-men sleeping-bags are infinitely warmer than single bags: objections of discomfort are overcome, for you are so tired you go to sleep anyway. I would, however, recommend the explorer to read Scott's remarks upon the same subject before making up his mind.[1]

[1] Scott, *Voyage of the Discovery*, vol. i. pp. 480-487.

CHAPTER XV

ANOTHER SPRING

O to dream, O to awake and wander
There, and with delight to take and render,
Through the trance of silence,
Quiet breath ;
Lo ! for there among the flowers and grasses,
Only the mightier movement sounds and passes ;
Only winds and rivers,
Life and death.

THE flowers were of snow, the rivers of ice, and if Stevenson had been to the Antarctic he would have made them so.

God sent His daylight to scatter the nightmares of the darkness. I can remember now the joy of an August day when the sun looked over the rim of the Barne Glacier, and my shadow lay clear-cut upon the snow. It was wonderful what a friendly thing that ice-slope became. We put the first trace upon the sunshine recorder ; there was talk of expeditions to Cape Royds and Hut Point, and survey parties ; and we ate our luncheon by the daylight which shone through the newly cleared window.

The coming Search Journey was organized to reach the Upper Glacier Depôt, and the plans were modelled upon the Polar Journey of the year before. But now we had no extensive depôts on the Barrier. It was intended that the dogs should run two trips out to Corner Camp during this spring. It was hoped that two parties of four men each might be able to ascend the Beardmore, one of them re-

maining about half-way up and doing geological and other scientific work while the other went up to the top.

In our inmost thoughts we were full of doubts and fears. "I had a long talk with Lashly, who asked me what I candidly thought had happened to the Southern Party. I told him a crevasse. He says he does not think so: he thinks it is scurvy. Talking about crevasses he says that, on the return of the Second Return Party, they came right over the ice-falls south of Mount Darwin,—descending about 2000 feet into a great valley, down which they travelled towards the west, and so to the Upper Glacier Depôt. I believe Scott told Evans (Lieut.) that he meant to come back this same way."

"Then the stuff they got into above the Cloudmaker must have been horrible. 'Why, there are places there you could put St. Paul's into, and that's no exaggeration, neither,' and they spent two nights in it. All the way down to the Gateway he says there were crevasses, great big fellows thirty feet across, which we of the First Return Party had crossed both going and coming back and which we never saw. But then much of the snow had gone and they were visible. Lieut. Evans was very badly snowblind most of this time. Then outside the Gateway, on the Barrier, they crossed many crevasses, and some had fallen in where we had passed over them."

"This makes one think. Is the state of affairs in which we found the glacier an extraordinary one, the snow being a special phenomenon due to that great blizzard and snowfall? Are we going to find blue ice this year where we found thick soft snow last? Well! I have got a regular bad needle again, just as I have had before. But somehow the needle has always worked off when we get right into it. What a blessing it is that things are seldom as bad in the reality as you expect they are going to be in your imagination: though I must say the Winter Journey was worse even than I had imagined. I remember that this time last year the thought of the Beardmore was very terrible: but the reality was never very bad."

"Lashly thinks it would be practically impossible for

five men to disappear down a crevasse. Where three men got through (and he said it would be impossible to get worse stuff than they came through), five men would be still better off. This is not my view, however. I think that the extra weight of one man might make all the difference in crossing a big crevasse: and if several men fell through one of those great bridges when sledge and men were all on it, I do not think the bridge would hold the sledge." [1]

Several trips were made to Cape Royds over the Barne Glacier, and then by portaging over the rocks to Shackleton's old hut. The sea was open here, except for small niches of ice, and the hut and the cape were comparatively free from drifts; probably the open water had swallowed the drifting snow. Not so Hut Point, which was surrounded by huge drifts: the verandah which we had built up as a stable was filled from floor to roof: there was no ice-foot to be seen, only a long snow-slope from the door to the sea-level. The hut itself, when we had dug our way into it, was clear. We took down stores for the Search Journey, and brought back with us the only surviving sledge-meter.

These instruments, which indicate by a clock-work arrangement the distance travelled in miles and yards, are actuated by a wheel which runs behind the sledge. They are of the greatest possible use, especially when sledging out of sight of land on the Barrier or Plateau, and we bitterly regretted that we had no more. They do not have an easy time on a glacier, and we lost the mechanism of one of our three Polar Journey meters when on the Beardmore. Dog-driving is hard on them; and pony-driving when the ponies are like Christopher plays the very deuce. Anyway we found we had only one left for this year, and this was more or less a dud. It was mended so far as possible but was never really reliable, and latterly was useless. A lot of trouble was taken by Lashly to make another with a bicycle wheel from one of our experimental trucks, the revolutions of which were marked on a counter which was almost exactly similar to one of our anemometer registers.

[1] My own diary.

A bicycle wheel of course stood much higher than our proper sledge-meters, and a difficulty rose in fixing it to the sledge so as to prevent its wobbling and at the same time allow it the necessary amount of play.

Meanwhile the mules were being brought on in condition. With daylight and improved weather they were exercised with loaded sledges on the sea-ice which still remained in South Bay. They went like lambs, and were evidently used to the work. Gulab was a troublesome little animal: he had no objection to pulling a sledge, but was just ultra-timid. Again and again he was got into position for having his traces hitched on, and each time some little thing, the flapping of a mitt, the touch of the trace, or the feel of the bow of the sledge, frightened him and he was off, and the same performance had to be repeated. Once harnessed he was very good. The breast harness sent down for them by the Indian Government was used: it was excellent; though Oates, I believe, had an idea that collars were better. However, we had not got the collars. The mules themselves looked very fit and strong: our only doubt was whether their small hoofs would sink into soft snow even farther than the ponies had done.

No record of this expedition would be complete without some mention of the cases of fire which occurred. The first was in the lazarette of the ship on the voyage to Cape Town: it was caused by an overturned lamp and easily extinguished. The second was during our first winter in the Antarctic, when there was a fire in the motor shed, which was formed by full petrol cases built up round the motors, and roofed with a tarpaulin. This threatened to be more serious, but was also put out without much difficulty. The third and fourth cases were during the winter which had just passed, and were both inside Winter Quarters.

Wright wanted a lamp to heat a shed which he was building out of cases and tarpaulins for certain of his work. He brought a lamp (not a primus) into the hut, and tried to make it work. He spent some time in the morning on this, and after lunch Nelson joined him. The lamp was fitted with an indicator to show the pressure obtained by pumping.

Nelson was pumping, kneeling at the end of the table next the bulkhead which divided the officers' and men's quarters : his head was level with the lamp, and the indicator was not showing a high pressure. Wright was standing close by. Suddenly the lamp burst, a rent three inches long appearing in the join where the bottom of the oil reservoir is fitted to the rest of the bowl. Twenty places were alight immediately, clothing, bedding, papers and patches of burning oil were all over the table and floor. Luckily everybody was in the hut, for it was blowing a blizzard and minus twenty outside. They were very quick, and every outbreak was stopped.

On September 5 it was blowing as if it would rip your wind-clothes off you. We were bagging pemmican in the hut when some one said, "Can you smell burning?" At first we could not see anything wrong, and Gran said it must be some brown paper he had burnt; but after three or four minutes, looking upwards, we saw that the top of the chimney piping was red hot where it went out through the roof, as was also a large ventilator trap which entered the flue at this point. We put salt down from outside, and the fire seemed to die down, but shortly afterwards the ventilator trap fell on to the table, leaving a cake of burning soot exposed. This luckily did not fall, and we raked it down into buckets. About a quarter of an hour afterwards all the chimney started blazing again, the flames shooting up into the blizzard outside. We got this out by pushing snow in at the top, and holding baths and buckets below to catch the débris. We then did what we ought to have done at the beginning of the winter—took the piping down and cleaned it all out.

Our last fire was a little business. Debenham and I were at Hut Point. I noticed that the place was full of smoke, which was quite usual with a blubber fire, but afterwards we found that the old hut was alight between the two roofs. The inner roof was too shaky to allow one to walk on it, and so, at Debenham's suggestion, we bent a tube which was lying about and syphoned some water up with complete success. Our more usual fire extinguishers were

Minimax, and they left nothing to be desired: indeed, all they left were the acid stains on the material touched.

From such grim considerations it is a pleasure to turn to the out-of-door life we now led. Emperor penguins began to visit us in companies up to forty in number: probably they were birds whose maternal or paternal instincts had been thwarted at Cape Crozier and had now taken to a vagrant life. They suffered, I am afraid, from the loose dogs, and on one occasion Debenham was out on the sea-ice with a team of those dogs of ours which were useless for serious sledging. He had taken them in hand and formed a team which was very creditable to him, if not to themselves. On this occasion he had managed with great difficulty to restrain them from joining a company of Emperors. The dogs were frantic, the Emperors undisturbed. Unable to go himself, one dog called Little Ginger unselfishly bit through the harness which restrained two of his companions, and Debenham, helplessly holding the straining sledge, could only witness the slaughter which followed.

The first skua gull arrived on October 24, and we knew they would soon breed on any level gravel or rock free from snow; and we should see the Antarctic petrels again, and perhaps a rare snowy petrel; and the first whales would be finding their way into McMurdo Sound. Also the Weddells, the common coastal seals of the Antarctic, were now, in the beginning of October, leaving the open water and lying out on the ice. They were nearly all females, and getting ready to give birth to their young.

The Weddell seal is black on top, and splashed with silver in other places. He measures up to 10 feet from nose to tail, eats fish, is corpulent and hulking. He sometimes carries four inches of blubber. On the ice he is one of the most sluggish of God's creatures, he sleeps continually, digests huge meals, and grunts, gurgles, pipes, trills and whistles in the most engaging way. In the sea he is transformed into one of the most elastic and lithe of beasts, catching his fish and swallowing them whole. As you stand over his blowhole his head appears, and he snorts at you with surprise

but no fear, opening and shutting his nostrils the while as he takes in a supply of fresh air. It is clear that they travel for many miles beneath the ice, and I expect they find their way from air-hole to air-hole by listening to the noise made by other seals. Some of the air-holes are exit and entrance holes as well, and I found at least one seal which appeared to have died owing to its opening freezing up. They may be heard at times grinding these holes open with their teeth (Ponting took some patient cinematographs showing the process of sawing the openings to these wells) and their teeth are naturally much worn by the time they become old. Wilson states that they are liable to kidney trouble : their skin is often irritable, which may be due to the drying salt from the sea ; and I have seen one seal which was covered with a suppurating rash. Their spleens are sometimes enormously enlarged when they first come out of the sea on to the ice, which is interesting because no one seems to know much about spleens. Speculation was caused amongst us by the fact that some of these air-holes had as it were a trap-door above them. One day I was on the ice-foot at Cape Evans at a time when North Bay was frozen over with about an inch or more of ice. A seal suddenly poked his nose up through this ice to get air, and when he disappeared a slab which had been raised by his head fell back into this trap position. Clearly this was the origin of the door.

Weddell seals and the Hut Point life are inextricably mixed up in my recollections of October. Atkinson, Debenham, Dimitri and I went down to Hut Point on the 12th, with the two dog-teams. We were to run two depôts out on to the Barrier, and Debenham, whose leg prevented his further sledging, was to do geological work and a plane table survey. Those of us who had borne the brunt of the travelling of the two previous sledge seasons were sick of sledging. For my own part I confess I viewed the whole proceedings with distaste, and I have no doubt the others did too ; but the job had to be done if possible, and there was no good in saying we were sick of it. From beginning to end of this year men not only laboured willingly, but put their hearts and souls into the work. To have to do

another three months' journey seemed bad enough, and to leave our comfortable Winter Quarters three weeks before we started on that journey was an additional irritation. We ran down in surface drift: it was thick to the south, the wind bit our faces and hands; we could see nothing by the time we got in, and the snow was falling heavily. The stable was full of beastly snow, the hut was cold and cheerless, and there was no blubber for the stove. And if we had only taken the ship and gone home when the period for which we had joined was passed, we might have been in London for the last six months!

But then the snow stopped, the wind went down, and the mountain tops appeared in all their glorious beauty. We were in the middle of a perfect summer afternoon, with a warm sun beating on the rocks as we walked round to Pram Point. There were many seals here already, and it was clear that the place would form a jolly nursery this year, for there must have been a lot of movement on the Barrier and the sea-ice was seamed with pressure ridges up to twenty feet in height. The hollows were buckled until the sea water came up and formed frozen ponds which would thaw later into lovely baths. Sheltered from the wind the children could chase their ridiculous tails to their hearts' content: their mothers would lie and sleep, awakening every now and then to scratch themselves with their long finger-nails. Not quite yet, but they were not far away: Lappy, one of our dogs who always looked more like a spaniel than anything else, heard one under the ice and started to burrow down to him!

Nearly three weeks later I paid several more visits to this delightful place. It was thick with seals, big seals and little seals, hairy seals and woolly seals: every day added appreciably to the number of babies, and to the baaings and bleatings which made the place sound like a great sheepfold. In every case where I approached, the mothers opened their mouths and bellowed at me to keep away, but they did not come for me though I actually stroked one baby. Often when the mother bellowed the little one would also open his mouth, producing just the ghost of a bellow:

not because he seemed afraid of us, but rather because he thought it was the right thing to do: as indeed it probably was. One old cow was marked with hoops all round her body, like an advertisement of Michelin tyres: only the hoops were but an inch apart from one another, and seemed to be formed by darker and longer bands of hair: probably something to do with the summer moult. Two cows, which scrambled out of the same hole one after the other, were fighting, the hinder one biting the other savagely as she made an ungainly entrance. The first was not in calf, the aggressor, however, was: this may have had something to do with it. They were both much cut about and bleeding.

A seal is never so pretty as when he is a baby. With his grey woolly coat, which he keeps for a fortnight, his comparatively long flippers and tail, and his big dark eyes, he looks very clean and pussy-like. I watched one running round and round after his tail, putting his flipper under his head as a pillow, and scratching himself, seemingly as happy as possible: yet it was pretty cold with some wind.

Little is known of the lighter side of a Weddell's life. It seems probable that their courtship is a ponderous affair. About October 26 Atkinson found an embryo of about a fortnight old, which is an interesting stage, and this was preserved with many others we found, but all of them were too old to be of any real value. I think there is a good deal of variation in the size of the calves at birth. There is certainly much difference between the care of individual mothers, some of which are most concerned when you approach, while others take little notice or lop away from you, leaving their calf to look after itself, or to find another mother. Sometimes they are none too careful not to roll or lie on their calves.

One afternoon I drove a bull seal towards a cow with a calf. The cow went for him bald-headed, with open mouth, bellowing and most disturbed. The bull defended himself as best he might but absolutely refused to take the offensive. The calf imitated his mother as best he could.

Meanwhile Atkinson and Dimitri took some mule-fodder and dog-biscuit to a point twelve miles south of

Corner Camp. They started on October 14 with the two dog-teams and found a most terrible surface on the Barrier, the sledges sometimes sinking as far as the 'fore-and-afters'; the minimum temperatures the first two nights were −39° and −25°; strong blizzard at Corner Camp; a lie-up for a day and a half, before they could push on in wind and drift and lay the depôt. The dogs ran back from Corner Camp to Hut Point on October 19, a distance of thirty miles. Three miles from Corner Camp three dogs of Atkinson's team fell into a crevasse, one of them falling right down to the length of his harness. The rest of the team, however, pulled on, and dragged the three dogs out as they went. Atkinson lost his driving-stick, which was left standing in the snow and served to mark a place to be avoided. Altogether a rather lucky escape: two men out alone with two dog-teams are somewhat helpless in case of emergency.

On October 25 Dimitri and I started to take a further depôt out to Corner Camp with the two dog-teams, pulling about 600 lbs. each. We found a much better surface than that experienced by Atkinson; in places really smooth and hard. "It is good to be out again in such weather, and it has been a very pleasant day." The minimum was only −24° that night, and we reached Corner Camp on the afternoon of the next day, following the old tracks where possible, and halting occasionally to hunt when we lost them. "Here we made the depôt and the dogs had a rest of $3\frac{1}{2}$ hours, and two biscuits. It was quaint to see them waiting for more food, for they knew they had not had their full whack."[1]

There was plenty of evidence that the Barrier had moved a long way during the last year. It had buckled up the sea-ice at Pram Point; there were at least three new and well-marked undulations before reaching Corner Camp; and the camp itself had moved visibly, judged by the bearings and sketches we possessed. I believe the annual movement had not been less than half a mile.

Corner Camp is a well-known trap for blizzards on the line of their exit at Cape Crozier, and it was clouding up,

[1] My own diary.

the barometer falling, and the temperature rising rapidly. "So we decided to come back some way, and have in the end come right back to the Biscuit Depôt, since it looked very threatening to the east. Here the temperature is lower (−15°) and it is clearing. Ross Island has been largely obscured, but the clouds are opening on Terror. We had a very good run and the dogs pulled splendidly, making light work of it: 29 miles for the day, half of it with loaded sledges! Lappy's feet are bleeding a good bit, owing to the snow balling in between his toes where the hair is unusually long. Bullet, who is fat and did not pull, celebrated his arrival in camp by going for Bielchik who had pulled splendidly all day! There is much mirage, and Observation Hill and Castle Rock are reversed."[1] We reached Hut Point the next day. Lappy's feet were still bad, and Dimitri wrapped him in his windproof blouse and strapped him on to the sledge. All went well until we got on to the sea-ice, when Lappy escaped and arrived an easy first.

Dog-driving is the devil! Before I started, my language would not have shamed a Sunday School, and now—if it were not Sunday I would tell you more about it. It takes all kinds to make a world and a dog-team. We had aristocrats like Osman, and Bolsheviks like Krisravitza, and lunatics like Hol-hol. The present-day employer of labour might stand amazed when he saw a crowd of prospective workmen go mad with joy at the sight of their driver approaching them with a harness in his hands. The most ardent trade unionist might boil with rage at the sight of eleven or thirteen huskies dragging a heavy load, including their idle master, over the floe with every appearance of intense joy. But truth to tell there were signs that they were getting rather sick of it, and within a few days we were to learn that dogs can chuck their paws in as well as many another. They had their king, of course: Osman was that. They combined readily and with immense effect against any companion who did not pull his weight, or against one who pulled too much. Dyk was unpopular among them,

[1] My own diary.

for when the team of which he was a member was halted he constantly whined and tugged at his harness in his eagerness to go on: this did not allow the rest of the team to rest, and they were justifiably resentful. Sometimes a team got a down upon a dog without our being able to discover their doggy reason. In any case we had to watch carefully to prevent them carrying out their intentions, their method of punishment always being the same and ending, if unchecked, in what they probably called justice, and we called murder.

I have referred to the crusts on the Barrier, where the snow lies in layers with an air-space, perhaps a quarter of an inch, or more, between them. These will subside as you pass over them, giving the inexperienced polar traveller some nasty moments until he learns that they are not crevasses. But the dogs thought they were rabbits, and pounced, time after time. There was a little dog called Mukaka, who got dragged under the sledge in one of the mad penguin rushes the dog-teams made when we were landing stores from the Terra Nova: his back was hurt and afterwards he died. "He is paired with a fat, lazy and very greedy black dog, Noogis by name, and in every march this sprightly little Mukaka will once or twice notice that Noogis is not pulling and will jump over the trace, bite Noogis like a snap, and be back again in his own place before the fat dog knows what has happened."[1]

Then there was Stareek (which is the Russian for old man, starouka being old woman). "He is quite a ridiculous 'old man,' and quite the nicest, quietest, cleverest old dog I have ever come across. He looks in face as though he knew all the wickedness of all the world and all its cares, and as if he were bored to death by them."[2] He was the leader of Wilson's team on the Depôt Journey, but decided that he was not going out again. Thereafter when he thought there was no one looking he walked naturally; but if he saw you looking at him he immediately had a frost-bitten paw, limped painfully over the snow, and looked so pitiful that only brutes like us could think of putting

[1] Wilson's Journal, *Scott's Last Expedition*, vol. i. p. 616. [2] *Ibid.*

him to pull a sledge. We tried but he refused to work, and his final victory was complete.

One more story: Dimitri is telling us how a "funny old Stareek" at Sydney came and objected to his treatment of the dogs (which were more than half wolves and would eat you without provocation). "He says to me, 'You not whip' —I say, 'What ho!' He go and fetch Mr. Meares—he try put me in choky. Then he go to Anton—give Anton cigarette and match—he say—'How old that horse?' pointing to Hackenschmidt—Anton say, very young—he not believe—he go try see Hackenschmidt's teeth—and old Starouka too—and Hackenschmidt he draw back and he rush forward and bite old Stareek twice, and he fall backwards over case—and ole woman pick him up. He very white beard which went so—I not see him again.'"

CHAPTER XVI

THE SEARCH JOURNEY

From my own diary

> Sleep after toyle, port after stormie seas,
> Ease after warre, death after life, does greatly please.
>
> SPENSER, *The Faerie Queen*.

October 28. *Hut Point.* A beautiful day. We finished digging out the stable for the mules this morning and brought in some blubber this afternoon. The Bluff has its cap on, but otherwise the sky is nearly clear: there is a little cumulus between White Island and the Bluff, the first I have seen this year on the Barrier. It is most noticeable how much snow has disappeared off the rocks and shingle here.

October 29. *Hut Point.* The mule party, under Wright, consisting of Gran, Nelson, Crean, Hooper, Williamson, Keohane and Lashly, left Cape Evans at 10.30 and arrived here at 5 P.M. after a good march in perfect weather. They leave Debenham and Archer at the hut, and I am afraid it will be dull work for them the next three months. Archer turned out early and made some cakes which they have brought with them. They camped for lunch seven miles from Cape Evans.

This is the start of the Search Journey. Everything which forethought can do has been done, and to a point twelve miles south of Corner Camp the mules will be travelling light owing to the depôts which have been laid. The barometer has been falling the last few days and is now low, while the Bluff is overcast. Yet it does not look like

THE MULE PARTY LEAVES CAPE EVANS

October, 29, 1912

a blizzard to come. Two Adélie penguins, the first, came to Cape Evans yesterday, and a skua was seen there on the 24th: so summer is really here.

October 30. *Hut Point.* It is now 8 P.M., and the mules are just off, looking very fit, keeping well together, and giving no trouble at the start. Their leaders turned in this afternoon, and to-night begins the new routine of night marching, just the same as last year. It did look thick on the Barrier this afternoon, and it was quite a question whether it was advisable for them to start. But it is rolling away now, being apparently only fog, which is now disappearing before some wind, or perhaps because the sun is losing its power. I think they will have a good march.

November 2, 5 A.M. *Biscuit Depôt.* Atkinson, Dimitri and I, with two dog-teams, left Hut Point last night at 8.30. We have had a coldish night's run, −21° when we left after lunch, −17° now. The surface was very heavy for the dogs, there being a soft coating of snow over everything since we last came this way, due no doubt to the foggy days we have been having lately. The sledge-meter makes it nearly 16 miles.

The mule party has two days' start on us, and their programme is to do twelve miles a day to One Ton Depôt. Their tracks are fairly clear, but there has been some drift from the east since they passed. We picked up our cairns well. We are pretty wet, having been running nearly all the way.

November 3. Early morning. 14½ miles. We are here at Corner Camp, but not without a struggle. We left the Biscuit Depôt at 6.30 P.M. yesterday, and it is now 4 A.M. The last six miles took us four hours, which is very bad going for dogs, and we have all been running most of the way. The surface was very bad, crusty and also soft: it was blowing with some low drift, and overcast and snowing. We followed the drifted-up mule tracks with difficulty and are lucky to have got so far. The temperature has been a constant zero.

There is a note here from Wright about the mules, which left here last night. They only saw two small crevasses on the way, but Khan Sahib got into the tide-crack

at the edge of the Barrier, and had to be hauled out with a rope. The mules are going fast over the first part of the day, but show a tendency to stop towards the end: they keep well together except Khan Sahib, who is a slower mule than the others. It is now blowing with some drift, but nothing bad, and beyond the Bluff it seems to be clear. We are all pretty tired.

November 4. *Early morning.* Well! this has been a disappointing day, but we must hope that all will turn out well. We turned out at 2 A.M. yesterday and then it was clearing all round, a mild blizzard having been blowing since we camped. We started at five in some wind and low drift. It was good travelling weather, and except for the first three miles the surface has been fair to good, and the last part very good. Yet the dogs could not manage their load, which according to programme should go up a further 150 lbs. each team here at Dimitri Depôt. One of our dogs, Kusoi, gave out, but we managed to get him along tied to the stern of the sledge, because the team behind tried to get at him and he realized he had better mend his ways. We camped for lunch when Tresor also was pretty well done. We were then on a very good surface, but were often pushing the sledge to get it along. The mule party were gone when we started again, and probably did not see us. We came on to the depôt, but we cannot hope to get along far on bad surfaces if we cannot get along on good ones. The note left by Wright states that their sledge-meter has proved useless, and this leaves all three parties of us with only one, which is not very reliable now.

So it has been decided that the dogs must return from 80° 30′, or 81° at the farthest, and instead of four mules, as was intended, going on from there, five must go on instead. The dogs can therefore now leave behind much of their own weights and take on the mules' weights instead. And this is the part where the mules' weights are so heavy. Perhaps the new scheme is the best, but it puts everything on the mules from 80° 30′: if they will do it all is well: if they won't we have nothing to fall back on.

Midnight, November 4-5. It has been blowing and drifting all day. We turned out again at mid-day on the 4th, and re-made the depôt with what we were to leave owing to the new programme. This is all rather sad, but it can't be helped. It was then blowing a summer blizzard, and we were getting frost-bitten when we started, following the mule tracks. There were plenty of cairns for us to pick up, and with the lighter loads and a very good surface we came along much better. Lunching at eight miles we arrived just as the mule party had finished their hoosh preparatory to starting, and it has been decided that the mules are not to go on to-night, but we will all start marching together to-morrow.

The news from this party is on the whole good, not the least good being that the sledge-meter is working again, though not very reliably. They are marching well, and at a great pace, except for Khan Sahib. Gulab, however, is terribly chafed both by his collar and by his breast harness, both of which have been tried. He has a great raw place where this fits on one side, and is chafed, but not so badly, on the other side. Lal Khan is pulling well, but is eating very little. Pyaree is doing very well, but has some difficulty in lifting her leg when in soft snow. Abdullah seems to be considered the best mule at present. On the whole good hearing.

Wright's sleeping-bag is bad, letting in light through cracks in a good many places. But he makes very little of it and does not seem to be cold—saying it is good ventilation. The mule cloths, which have a rough lining to their outside canvas, are collecting a lot of snow, and all the mules are matted with cakes of snow. They are terrible rope-eaters, cloth-eaters, anything to eat, though they are not hungry. And they have even learnt to pull their picketing buckles undone, and go walking about the camp. Indeed Nelson says that the only time when Khan Sahib does not cast himself adrift is when he is ready to start on the march.

November 6. *Early morning.* We had a really good lie-in yesterday, and after the hard slogging with the dogs

during the last few days I for one was very glad of it. We came on behind, and in sight of the mules this last march, and the change in the dogs was wonderful. Where it had been a job to urge them on over quite as good a surface yesterday, to-day for some time we could not get off the sledge except for short runs : although we had taken 312 lbs. weight off the mules and loaded it on to the dogs.

We had a most glorious night for marching, and it is now bright sunlight, and the animals' fur is quite warm where the sun strikes it. We have just had a bit of a fight over the dog-food, Vaida going for Dyk, and now the others are somewhat excited, and there are constant growlings and murmurings.

The camp makes more of a mark than last year, for the mules are dark while the ponies were white or grey, and the cloths are brown instead of light green. The consequence is that the camp shows up from a long distance off. We are building cairns at regular distances, and there should be no difficulty in keeping on the course in fair weather at any rate. Now in the land of big sastrugi. Erebus is beginning to look small, but we could see an unusually big smoke from the crater all day.

November 7. *Early morning.* Not an easy day. It was − 9° and overcast when we turned out, and the wind was then dying down, but it had been blowing up to force 5, with surface drift during the day. We started in a bad light and the surface, which was the usual hard surface common here, with big sastrugi, was covered by a thin layer of crystals which were then falling. This naturally made it very much harder pulling : we with the dogs have been running nearly all the twelve miles, and I for one am tired. At lunch Atkinson thought he saw a tent away to our right, —the very thought of it came as a shock,—but it proved to be a false alarm. We have been keeping a sharp look-out for the gear which was left about this part by the Last Return Party, but have seen no sign of it.

It is now − 14°, but the sun is shining brightly in a clear sky, and it feels beautifully warm. It seems a very

regular thing for the sky to cloud over as the sun gets low towards nightfall—and directly the sun begins to rise again the clouds disappear in a most wonderful way.

November 8. *Early morning.* Last night's twelve miles was quite cold for the time of year, being −23° at lunch and now −18°. But it is calm, with bright sun, and this temperature feels warm. However, there are some frost-bites as a result, both Nelson and Hooper having swollen faces. The same powder and crystals have been on the surface, but we have carried the good Bluff surface so far, being now four miles beyond Bluff Depôt. This is fortunate, and to the best of my recollection we were already getting on to a soft surface at this point last summer. If so there must have been more wind here this year than last, which, according to the winter we have had, seems probable.

We made up the Bluff Depôt after lunch, putting up a new flag and building up the cairn, leaving two cases of dog-biscuit for the returning dog-teams. It is curious that the drift to leeward of the cairn, that is N.N.E., was quite soft, the snow all round and the drifts on either side being hard—exceptionally hard in fact. Why this drift should remain soft when a drift in the same place is usually hard is difficult to explain. All is happy in the mule camp. They have given Lal a drink of water and he has started to eat, which is good news. Some of the mules seem snow-blind, and they are now all wearing their blinkers. I have just heard that Gran swung the thermometer at four this morning and found it −29°. Nelson's face is a sight—his nose a mere swollen lump, frost-bitten cheeks, and his goggles have frosted him where the rims touched his face. Poor Marie!

November 9. *Early morning.* Twelve more miles to the good, and we must consider ourselves fortunate in still carrying on the same good surface, which is almost if not quite as good as that of yesterday. This is the only time I have ever seen a hard surface here, not more than fifteen miles from One Ton, and it looks as if there had been much higher winds. The sastrugi, which have been facing S.W., are now beginning to run a little more westerly. I believe

this to be quite a different wind circulation from Ross Island, which as a whole gets its wind from the Bluff. The Bluff is, I believe, the dividing line, though big general blizzards sweep over the whole, irrespective of local areas of circulation. This was amply corroborated by our journey out here last autumn. Well, this is better than then—just round here we had a full blizzard and $-33°$.

November 10. *Early morning.* A perfect night for marching, but about $-20°$ and chilly for waiting about. The mules are going well, but Lal Khan is thinning down a lot: Abdullah and Khan Sahib are also off their feed. Their original allowance of 11 lbs. oats and oilcake has been reduced to 9 lbs., and they are not eating this. The dogs took another 300 lbs. off them to-day, and pulled it very well. The surface has been splendidly hard, which is most surprising. Wright does not think that there has been an abnormal deposition of snow the last winter; he says it is about $1\frac{1}{2}$ feet, which is much the same as last year. The mules are generally not sinking in more than two inches, but in places, especially latterly, they have been in five or six. This is the first we have had this year of crusts, and some of them to-day have been exceptionally big: two at lunch must have lasted several seconds. The dogs seem to think the devil is after them when one of these goes off, and put on a terrific spurt. It is interesting to watch them snuffing in the hoof-marks of the mules, where there is evidently some scent left. In these temperatures they are always kicking their legs about at the halts. As the sun gained power this morning a thick fog came up very suddenly. I believe this is a sign of good weather.

November 11. *Early morning. One Ton Depôt.* Wright got a latitude sight yesterday putting us six miles from One Ton, and our sledge-meter shows $5\frac{3}{4}$, and here we are. More frost-bite this morning, and it was pretty cold starting in a fair wind and $-7°$ temperature. We have continued this really splendid surface, and now the sastrugi are pointing a little more to the south of S.W. While there are not such big mounds, the surface does not yet show any signs of getting bad. There were the most beautiful cloud-effects

THE DOG PARTY LEAVES HUT POINT

November, 1, 1912

as we came along—a deep black to the west, shading into long lines of grey and lemon yellow round the sun, with a vertical shaft through them, and a bright orange horizon. Now there is a brilliant parhelion. Given sun, two days here are never alike. Whatever the monotony of the Barrier may be, there is endless variety in the sky, and I do not believe that anywhere in the world such beautiful colours are to be seen.

I had a fair panic as we came up to the depôt. I did not see that one body of the ponies had gone ahead of the others and camped, but ahead of the travelling ponies was the depôt, looking very black, and I thought that there was a tent. It would be too terrible to find that, though one knew that we had done all that we could, if we had done something different we could have saved them.

And then we find that the provisions we left here for them in the tank are soaked with paraffin. How this has happened is a mystery, but I think that the oil in the XS tin, which was very full, must have forced its way out in a sudden rise of temperature in a winter blizzard, and though the tin was not touching the tank, it has found its way in.

Altogether things seemed rather dismal, but a visit to the mules is cheering, for they seem very fit as a whole and their leaders are cheerful. There are three sacks of oats here—had we known it would have saved a lot of weight —but we didn't, and we have plenty with what we have brought, so they will be of little use to us. There is no compressed fodder, which would have been very useful, for the animals which are refusing the oats would probably eat it.

Gulab has a very bad chafe, but he is otherwise fit—and it does not seem possible in this life to kill a mule because of chafing. It is a great deal to know that he does not seem to be hurt by it, and pulls away gallantly. Crean says he had to run a mile this morning with Rani. Marie says he is inventing some new ways of walking, one step forward and one hop back, in order to keep warm when leading Khan Sahib. Up to date we cannot say that the Fates have been unkind to us.

November 12. *Early morning.* *Lunch* 2.30 A.M. I am afraid our sledge-meters do not agree over this morning's march. The programme is to do thirteen miles a day if possible from here: that is $7\frac{1}{2}$ before lunch and $5\frac{1}{2}$ afterwards. We could see two cairns of last year on our right as we came along. We have got on to a softer surface now, and there is bad news of Lal Khan, and it will depend on this after-lunch march whether he must be shot this evening or not. It was intended to shoot a mule two marches from One Ton, but till just lately it had not been thought that it must be Lal Khan. He is getting very slow, and came into camp with Khan Sahib: the trouble of course is that he will not eat: he has hardly eaten, they say, a day's ration since he left Hut Point, and he can't work on nothing. It is now − 16°, with a slight southerly wind.

Nearly mid-day. 11-12 *miles south of One Ton.* We have found them—to say it has been a ghastly day cannot express it—it is too bad for words. The tent was there, about half-a-mile to the west of our course, and close to a drifted-up cairn of last year. It was covered with snow and looked just like a cairn, only an extra gathering of snow showing where the ventilator was, and so we found the door.

It was drifted up some 2-3 feet to windward. Just by the side two pairs of ski sticks, or the topmost half of them, appeared over the snow, and a bamboo which proved to be the mast of the sledge.

Their story I am not going to try and put down. They got to this point on March 21, and on the 29th all was over.

Nor will I try and put down what there was in that tent. Scott lay in the centre, Bill on his left, with his head towards the door, and Birdie on his right, lying with his feet towards the door.

Bill especially had died very quietly with his hands folded over his chest. Birdie also quietly.

Oates' death was a very fine one. We go on to-morrow to try and find his body. He was glad that his regiment would be proud of him.

They reached the Pole a month after Amundsen.

We have everything—records, diaries, etc. They have

among other things several rolls of photographs, a meteorological log kept up to March 13, and, considering all things, a great many geological specimens. *And they have stuck to everything.* It is magnificent that men in such case should go on pulling everything that they have died to gain. I think they realized their coming end a long time before. By Scott's head was tobacco: there is also a bag of tea.

Atkinson gathered every one together and read to them the account of Oates' death given in Scott's Diary: Scott expressly states that he wished it known. His (Scott's) last words are:

"For God's sake take care of our people."

Then Atkinson read the lesson from the Burial Service from Corinthians. Perhaps it has never been read in a more magnificent cathedral and under more impressive circumstances—for it is a grave which kings must envy. Then some prayers from the Burial Service: and there with the floor-cloth under them and the tent above we buried them in their sleeping-bags—and surely their work has not been in vain.[1]

That scene can never leave my memory. We with the dogs had seen Wright turn away from the course by himself and the mule party swerve right-handed ahead of us. He had seen what he thought was a cairn, and then something looking black by its side. A vague kind of wonder gradually gave way to a real alarm. We came up to them all halted. Wright came across to us. 'It is the tent.' I do not know how he knew. Just a waste of snow: to our right the remains of one of last year's cairns, a mere mound: and then three feet of bamboo sticking quite alone out of the snow: and then another mound, of snow, perhaps a trifle more pointed. We walked up to it. I do not think we quite realized—not for very long—but some one reached up to a projection of snow, and brushed it away. The green flap of the ventilator of the tent appeared, and we knew that the door was below.

Two of us entered, through the funnel of the outer tent,

[1] My own diary.

and through the bamboos on which was stretched the lining of the inner tent. There was some snow—not much—between the two linings. But inside we could see nothing—the snow had drifted out the light. There was nothing to do but to dig the tent out. Soon we could see the outlines. There were three men here.

Bowers and Wilson were sleeping in their bags. Scott had thrown back the flaps of his bag at the end. His left hand was stretched over Wilson, his lifelong friend. Beneath the head of his bag, between the bag and the floor-cloth, was the green wallet in which he carried his diary. The brown books of diary were inside: and on the floor-cloth were some letters.

Everything was tidy. The tent had been pitched as well as ever, with the door facing down the sastrugi, the bamboos with a good spread, the tent itself taut and ship-shape. There was no snow inside the inner lining. There were some loose pannikins from the cooker, the ordinary tent gear, the personal belongings and a few more letters and records—personal and scientific. Near Scott was a lamp formed from a tin and some lamp wick off a finnesko. It had been used to burn the little methylated spirit which remained. I think that Scott had used it to help him to write up to the end. I feel sure that he had died last—and once I had thought that he would not go so far as some of the others. We never realized how strong that man was, mentally and physically, until now.

We sorted out the gear, records, papers, diaries, spare clothing, letters, chronometers, finnesko, socks, a flag. There was even a book which I had lent Bill for the journey—and he had brought it back. Somehow we learnt that Amundsen had been to the Pole, and that they too had been to the Pole, and both items of news seemed to be of no importance whatever. There was a letter there from Amundsen to King Haakon. There were the personal chatty little notes we had left for them on the Beardmore—how much more important to us than all the royal letters in the world.

We dug down the bamboo which had brought us to

this place. It led to the sledge, many feet down, and had been rigged there as a mast. And on the sledge were some more odds and ends—a piece of paper from the biscuit box: Bowers' meteorological log: and the geological specimens, thirty pounds of them, all of the first importance. Drifted over also were the harnesses, ski and ski-sticks.

Hour after hour, so it seemed to me, Atkinson sat in our tent and read. The finder was to read the diary and then it was to be brought home—these were Scott's instructions written on the cover. But Atkinson said he was only going to read sufficient to know what had happened —and after that they were brought home unopened and unread. When he had the outline we all gathered together and he read to us the Message to the Public, and the account of Oates' death, which Scott had expressly wished to be known.

We never moved them. We took the bamboos of the tent away, and the tent itself covered them. And over them we built the cairn.

I do not know how long we were there, but when all was finished, and the chapter of Corinthians had been read, it was midnight of some day. The sun was dipping low above the Pole, the Barrier was almost in shadow. And the sky was blazing—sheets and sheets of iridescent clouds. The cairn and Cross stood dark against a glory of burnished gold.

Copy of Note left at the Cairn over the Bodies

November 12th, 1912.
Lat. 79° 50′ S.

This Cross and Cairn are erected over the bodies of Capt. Scott, C.V.O., R.N.; Dr. E. A. Wilson, M.B., B.A. Cantab.; Lt. H. R. Bowers, Royal Indian Marines. A slight token to perpetuate their gallant and successful attempt to reach the Pole. This they did on the 17th January 1912 after the Norwegian expedition had already done so. Inclement weather and lack of fuel was the cause of their death.

Also to commemorate their two gallant comrades, Capt. L. E. G. Oates of the Inniskilling Dragoons, who walked to his death in a blizzard to save his comrades, about 18 miles south of this position; also of Seaman Edgar Evans, who died at the foot of the Beardmore Glacier.

The Lord gave and the Lord taketh away. Blessed be the name of the Lord.

Relief Expedition.
(Signed by all members of the party.)

My diary goes on:

Midnight, November 12-13. I cannot think that anything which could be done to give these three great men—for great they were—a fitting grave has been left undone.

A great cairn has been built over them, a mark which must last for many years. That we can make anything that will be permanent on this Barrier is impossible, but as far as a lasting mark can be made it has been done. On this a cross has been fixed, made out of ski. On either side are the two sledges, fixed upright and dug in.

The whole is very simple and most impressive.

On a bamboo standing by itself is left the record which I have copied into this book, and which has been signed by us all.

We shall leave some provisions here, and go on lightly laden to see if we can find Titus Oates' body: and so give it what burial we can.

We start in about an hour, and I for one shall be glad to leave this place.

I am very very sorry that this question of the shortage of oil has arisen. We in the First Return Party were most careful with our measurement—having a ruler of Wright's and a piece of bamboo with which we did it: measuring the total height of oil in each case, and then dividing up the stick accordingly with the ruler: and we were *always* careful to take *a little less than we were entitled to*, which was stated to me, and stated by Birdie in his depôt notes, to be one-third of everything in the depôt.

How the shortage arose is a mystery. And they eleven miles from One Ton and plenty!

Titus did not show his foot till about three days before he died. The foot was then a great size, and almost every night it would be frost-bitten again. Then the last day at lunch he said he could go on no more—but they said he must: he wanted them to leave him behind in his bag. That night he turned in, hoping never to wake: but he woke, and then he asked their advice: they said they must all go on together. A thick blizzard was blowing, and he said, after a bit, "Well, I am just going outside, and I may be some time." They searched for him but could not find him.

They had a terrible time from 80° 30′ on to their last camp. There Bill was very bad, and Birdie and the Owner had to do the camping.

And then, eleven miles from plenty, they had *nine days of blizzard, and that was the end.*

They had a good spread on their tent, and their ski-sticks were standing, but their ski were drifted up on the ground.

The tent was in excellent condition—only down some of the poles there were some chafes.

They had been trying a spirit lamp when all the oil was gone.

At 88° or so they were getting temperatures from −20° to −30°. At 82°, 10,000 feet lower, it was regularly down to −47° in the night-time, and −30° during the day: for no explainable reason.

Bill's and Birdie's feet got bad—the Owner's feet got bad last.

It is all too horrible—I am almost afraid to go to sleep now.

November 13. *Early morning.* We came on just under seven miles with a very cold moist wind hurting our faces all the way. We have left most of the provisions to pick up again. We purpose going on thirteen miles to-morrow and search for Oates' body, and then turn back and get the provisions back to Hut Point and see what can be done over in the west to get up that coast.

We hope to get two mules back to Hut Point. If possible, we want to communicate with Cape Evans.

Atkinson has been quite splendid in this very trying time.

November 14. *Early morning.* It has been a miserable march. We had to wait some time after hoosh to let the mules get ahead. Then we went on in a cold raw fog and some head wind, with constant frost-bites. The surface has been very bad all day for the thirteen miles: if we had been walking in arrowroot it would have been much like this was. At lunch the temperature was – 14.7°.

Then on when it was drifting with the wind in our faces and in a bad light. What we took to be the mule party ahead proved to be the old pony walls 26 miles from One Ton. There was here a bit of sacking on the cairn, and Oates' bag. Inside the bag was the theodolite, and his finnesko and socks. One of the finnesko was slit down the front as far as the leather beckets, evidently to get his bad foot into it. This was fifteen miles from the last camp, and I suppose they had brought on his bag for three or four miles in case they might find him still alive. Half-a-mile from our last camp there was a very large and quite unmistakable undulation, one-quarter to one-third of a mile from crest to crest: the pony walls behind us disappeared almost as soon as we started to go down, and reappeared again on the other side. There were, I feel sure, other rolls, but this was the largest. We have seen no sign of Oates' body.

About half an hour ago it started to blow a blizzard, and it is now thick, but the wind is not strong. The mules, which came along well considering the surface, are off their feed, and this may be the reason.

Dimitri saw the Cairn with the Cross more than eight miles away this morning, and in a good light it would be seen from much farther off.

November 15. *Early morning.* We built a cairn to mark the spot near which Oates walked out to his death, and we placed a cross on it. Lashed to the cross is a record, as follows:

> Hereabouts died a very gallant gentleman, Captain L. E. G. Oates of the Inniskilling Dragoons. In March 1912, returning from the Pole, he walked willingly to his death in a blizzard to try and save his comrades, beset by hardship. This note is left by the Relief Expedition. 1912.

This was signed by Atkinson and myself.

We saw the cairn for a long way in a bad light as we came back to-day.

The original plan with which we started from Cape Evans was, if the Party was found where we could still bear out sufficiently to the eastward to have a good chance of missing the pressure caused by the Beardmore, to go on and do what we could to survey the land south of the Beardmore: for this was the original plan of Captain Scott for this year's sledging. But as things are I do not think there can be much doubt that we are doing right in losing no time in going over to the west of McMurdo Sound to see whether we can go up to Evans Coves, and help Campbell and his party.

We brought on Oates' bag. The theodolite was inside.

A thickish blizzard blew all day yesterday, but it was clear and there was only surface drift when we turned out for the night march. Then again as we came along, the sky became overcast—all except over the land, which remains clear these nights when everything else is obscured. We noticed the same thing last year. Now the wind, which had largely dropped, has started again and it is drifting. We have had wind and drift on four out of the last five days.

November 16. *Early morning.* When we were ready to start with the dogs it was blowing a thick blizzard, but the mules had already started some time, when it was not thick. We had to wait until nearly 4 A.M. before we could start, and came along following tracks. It is very warm and the surface is covered with loose snow, but the slide in it seems good. We found the mules here at the Cairn and Cross, having been able to find their way partly by the old tracks.

I have been trying to draw the grave. Of all the fine

monuments in the world none seems to me more fitting; and it is also most impressive.

November 17. *Early morning.* I think we are all going crazy together—at any rate things are pretty difficult. The latest scheme is to try and find a way over the plateau to Evans Coves, trying to strike the top of a glacier and go down it. There can be no good in it: if ever men did it, they would arrive about the time the ship arrived there too, and their labour would be in vain. If they got there and the ship did not arrive, there is another party stranded. They would have to wait till February 15 or 20 to see if the ship was coming, and then there would be no travelling back over the plateau: even if we could do it those men there could not.

It was almost oppressively hot yesterday—but I'll never grumble about heat again. It has now cleared a lot and we came along on the cairns easily—but on a very soft downy surface, and the travelling has not been fast. We bring with us the Southern Party's gear. The sledge, which was the 10-foot which they brought on from the bottom of the glacier, has been left.

November 18. *Early morning.* I am thankful to say that the plateau journey idea has been given up.

Once more we have come along in thick, snowy weather. If we had not men on ski to steer we could never keep much of a course, but Wright is steering us very straight, keeping a check on the course by watching the man behind, and so far we have been picking up all the cairns. This morning we passed the pony walls made on November 10. And yet they were nearly level with the ground; so they are not much of a mark. Yank has just had a disagreement with Kusoi—for Kusoi objected to his trying to get at the meat on the sledge. The mules have been sinking in a long way, and are marching very slowly. Pyaree eats the tea-leaves after meals: Rani and Abdullah divide a rope between them at the halts; and they have eaten the best part of a trace since our last camp. These animals eat anything but their proper food, and this some of them will hardly touch.

It cleared a bit for our second march, and we have done our 13 miles, but it was very slow travelling. Now it is drifting as much as ever. Yank, that redoubtable puller, has just eaten himself loose for the third time since hoosh. This time I had to go down to the pony walls to get him.

We have had onions for the first time to-night in our hoosh—they are most excellent. Also we have been having some Nestlé's condensed milk from One Ton Depôt—which I do not want to see again, the depôt I mean. Peary must know what he is about, taking milk as a ration: the sweetness is a great thing, but it would be heavy: we have been having it with temperature down to – 14°, when it was quite manageable, but I don't know what it would be like in colder temperatures.

November 19. *Early morning.* We have done our 13 miles to-day and have got on to a much better surface. By what we and others have seen before, it seems that last winter must have generally been an exceptional one. There have been many parties out here: we have never before seen this wind-swept surface, on which it is often too slippery to walk comfortably. I do not know what temperatures the Discovery had in April, but it was much colder last April than it was the year before. And then nothing had been experienced down here to compare with the winds last winter.

There was a high wind and a lot of drift yesterday during the day, and now it is blowing and drifting as usual. During the last nine days there has only been one, the day we found the tent, when it has not been drifting during all or part of the day. It is all right for travelling north, but we should be having very uncomfortable marches if we were marching the other way.

November 20. *Early morning.* To-day we have seemed to be walking in circles through space. Wright, by dint of having a man behind to give him a fixed point to steer upon, has steered us quite straight, and we have picked up every cairn. The pony party camped for lunch by two cairns, but they never knew the two cairns were there until a piece of paper blew away and had to be fetched: and it

was caught against one of the cairns. They left a flag there to guide us, and though we saw and brought along the flag, we never saw the cairns. The temperature is $-22.5°$, and it is now blowing a full blizzard. All this snow has hitherto been lying on the ground and making a very soft surface, for though the wind has always been blowing it has never been very strong. This snow and wind, which have now persisted for nine out of the last ten days, make most dispiriting marches; for there is nothing to see, and finding tracks or steering is a constant strain. We are certainly lucky to have been able to march as we have.

Note on Mules.—The most ardent admirer of mules could not say that they were a success. The question is whether they might be made so. There was really only one thing against them but that is a very important one—they would not eat on the Barrier. From the time they went away to the day they returned (those that did return, poor things) they starved themselves, and yet they pulled biggish loads for 30 days.

If they would have eaten they would have been a huge success. They travelled faster than the ponies and, with one exception, kept together better than the ponies. If both were eating their ration it is questionable whether a good mule or a good pony is to be preferred. Our mules were of the best, and they were beautifully trained and equipped by the Indian Government: yet on November 13, a fortnight from the start, Wright records, "mules are a poor substitute for ponies. Not many will see Hut Point again, I think. Doubt if any would have got much farther than this if surfaces had been as bad this year as last."[1]

Though they would not eat oats, compressed fodder and oil-cake, they were quite willing to eat all kinds of other things. If we could have arrived at the mule equivalent to a vegetarian diet they might have pulled to the Beardmore without stopping. The nearest to this diet at which we could arrive was saennegrass, tea-leaves, tobacco ash and rope—all of which were eaten with gusto. But supplies were very limited. They ate dog-biscuit as long as they

[1] Wright's diary.

thought we were not looking—but as soon as they realized they were meant to eat it they went on hunger-strike again. But during halts at cairns Rani and Pyaree would stand solemnly chewing the same piece of rope from different ends. Abdullah always led the line, and followed Wright's ski tracks faithfully, so that if another man was ahead and Wright turned aside Abdullah always turned too. It was quite a manœuvre for Wright to read the sledge-meter at the back of the sledge. As for Begum: "Got Begum out of a soft patch by rolling her over." [1]

On the whole the mules failed to adapt themselves to this life, and as such must at present be considered to be a failure for Antarctic work. Certainly those of our ponies which had the best chance to adapt themselves went farthest, such as Nobby and Jimmy Pigg, both of whom had experience of Barrier sledging before they started on the Polar Journey.

November 21. *Early morning.* It has cleared at last, the disturbance rolling away to the east during our first march. The surface was very bad and the mules were not going well. At this time last year many of the ponies were still quite difficult to make stand just before starting. But these mules start off now most dolefully. I am afraid they will not all get back to Hut Point.

Two and a half miles after lunch, *i.e.* just over forty miles from the depôt, we turned out to the eastward and found the gear left by the Second Return Party, when Evans was so ill. The theodolite, which belonged to Evans, is I believe there, but though we dug all round we were unable to find it. The ski were all upright, drifted to within six inches of the shoes. Most of the gear was clothing, which we have left, with the skis, in the tank. We brought on a roll of Birdie's photographs, taken on the plateau, and three geological specimens: deep-seated rocks I think. This was all of importance that there was there.

The N Ration, which we have now come to, consists of about 40 oz. of food. At present, doing the work we are doing, and with these high temperatures, – 23° when

[1] Wright's diary.

we started, for instance, and −17° now, the men do not want it. For what it was intended for, hard man-hauling, it would probably be an excellent ration, and very satisfying.

November 22. *Early morning.* We could not have had a more perfect night to march. Yesterday at 4 P.M., holding the thermometer in the sun, the spirit rose to 30°: it was almost too warm in the tent. The cairns show very plainly —in such weather navigation of this kind would be dead easy. But they are already being eaten away and toppling. The pony walls are drifted level—huge drifts, quite hard, running up to windward and down to lee.

The dogs are getting more hungry, and want to get at the mules, which makes them go better. They went very well to-day, but too fast once, for we had a general mix-up: Bieliglass under the sledge and the rest all tangled up and ready for a fight at the first chance. How one of the front pair of dogs got under the sledge is a mystery.

Among the Polar Party's gear is a letter to the King of Norway. It was left by the Norwegians for Scott to take back. It is wrapped in a piece of thin windcloth with one dark check line in it. Coarser and rougher and, I should say, heavier than our Mandelbergs.

November 23. *Early morning.* We were to make Dimitri Depôt this morning, but we came on in a fog, and the mule party camped after running down the distance. Wright came back and said, "If we have passed it, it's over there" —and as he pointed the depôt showed—not more than 200 yards away. So that is all right. We, the dog party, go on in advance to-morrow, so that no time may be lost, and if the ice is still good, Atkinson will get over to Cape Evans.

November 24. *Early morning.* A glut of foot-walloping in soft snow and breaking crusts. We have done between 17 and 18 miles to-day. We saw no crevasses, and have marked the course well, building up the cairns and leaving two flags—so the mule party should be all right. The dogs were going well behind the ponies, but directly we went ahead they seemed to lose heart. I think they are tired of the Barrier: a cairn now awakens little interest: they know

'ATCH'

'TITUS' OATES

it is only a mark and it does not mean a camp: they are all well fed, and fairly fat and in good condition. With a large number of dogs I suppose one team can go ahead when it is going well—changing places with another—each keeping the others going. But I do not think that these dogs now will do much more; but they have already done as much as any dogs of which we have any record.

The land is clearing gradually. I have never seen such contrasts of black rock and white snow, and White Island was capped with great ranges of black cumulus, over which rose the pure white peaks of the Royal Society Range in a blue sky. The Barrier itself was quite a deep grey, making a beautiful picture. And now Observation Hill and Castle Rock are in front. I don't suppose I shall ever see this view again: but it is associated with many memories of returning to home and plenty after some long and hard journeys: in some ways I feel sorry—but I have seen it often enough.

November 25. *Early morning.* We came in 24 miles with our loads, to find the best possible news—Campbell's Party, all well, are at Cape Evans. They arrived here on November 6, starting from Evans Coves on September 30. What a relief it is, and how different things seem now! It is the first real bit of good news since February last—it seems an age. We mean to get over the sea-ice, if possible, as soon as we can, and then we shall hear their story.

November 26. *Early morning.* Starting from Hut Point about 6.45 P.M. last evening, we came through by about 9 P.M., and sat up talking and hearing all the splendid news till past 2 A.M. this morning.

All the Northern Party look very fat and fit, and they are most cheerful about the time they have had, and make light of all the anxious days they must have spent and their hard times.

I cannot write all their story. When the ship was battling with the pack to try and get in to them they had open water in Terra Nova Bay to the horizon, as seen from 200 feet high. They prepared for the winter, digging their hut into a big snowdrift a mile from where they were

landed. They thought that the ship had been wrecked—or that every one had been taken off from here, and that then the ship had been blown north by a succession of furious gales which they had and could not get back. They never considered seriously the possibility of sledging down the coast before the winter. They got settled in and were very warm—so warm that in August they did away with one door, of which they had three, of biscuit boxes and sacking.

Their stove was the bottom of an oil tin, and they cooked by dripping blubber on to seal bones, which became soaked with the blubber, and Campbell tells me they cooked almost as quickly as a primus. Of course they were filthy. Their main difficulty was dysentery and ptomaine poisoning.

Their stories of the winter are most amusing—of "Placing the Plug, or Sports in the Antarctic"; of lectures; of how dirty they were; of their books, of which they had four, including David Copperfield. They had a spare tent, which was lucky, for the bamboos of one of theirs were blown in during a big wind, and the men inside it crept along the piedmont on hands and knees to the igloo and slept two in a bag. How the seal seemed as if they would give out, and they were on half rations and very hungry: and they were thinking they would have to come down in the winter, when they got two seals: of the fish they got from the stomach of a seal—"the best feed they had"—the blubber they have eaten.

But they were buried deep in the snow and quite warm. Big winds all the time from the W.S.W., cold winds off the plateau—in the igloo they could hear almost nothing outside—how they just had a biscuit a day at times, sugar on Sundays, etc.

And so all is well in this direction, and we have done right in going south, and we have at least succeeded in getting all records. I suppose any news is better than no news.

Evening. The Pole Party photos of themselves at the Pole and at the Norwegian cairn (a Norwegian tent, post and two flags) are very good indeed—one film is unused, one used on these two subjects: taken with Birdie's

camera. All the party look fit and well, and their clothes are not iced up. It was calm at the time: the surface looks rather soft.

Atkinson and Campbell have gone to Hut Point with one dog-team, and we are all to forgather here. The ice still seems good from here to Hut Point: all else open water as far as can be seen.

A steady southerly wind has been blowing here for three days now. The mules should get into Hut Point to-day.

It is the happiest day for nearly a year—almost the only happy one.

CHAPTER XVII

THE POLAR JOURNEY

DON JUAN. This creature Man, who in his own selfish affairs is a coward to the backbone, will fight for an idea like a hero. He may be abject as a citizen ; but he is dangerous as a fanatic. He can only be enslaved while he is spiritually weak enough to listen to reason. I tell you, gentlemen, if you can show a man a piece of what he now calls God's work to do, and what he will later on call by many new names, you can make him entirely reckless of the consequences to himself personally. . . .

DON JUAN. Every idea for which Man will die will be a Catholic idea. When the Spaniard learns at last that he is no better than the Saracen, and his prophet no better than Mahomet, he will arise, more Catholic than ever, and die on a barricade across the filthy slum he starves in, for universal liberty and equality.

THE STATUE. Bosh !

DON JUAN. What you call bosh is the only thing men dare die for. Later on, Liberty will not be Catholic enough : men will die for human perfection, to which they will sacrifice all their liberty gladly.

BERNARD SHAW, *Man and Superman.*

V. THE POLE AND AFTER

The Polar Party.	*Depôts.*
SCOTT	One Ton [79° 29′].
WILSON	Upper Barrier or Mount Hooper [80° 32′].
BOWERS	Middle Barrier [81° 35′].
OATES	Lower Barrier [82° 47′].
Seaman EVANS.	Shambles Camp [N. of Gateway].
	Lower Glacier [S. of Gateway].
	Middle Glacier [Cloudmaker].
	Upper Glacier [Mt. Darwin].
	Three Degree [86° 56′].
	1½ Degree [88° 29′].
	Last Depôt [89° 32′].

SCOTT returned from the Discovery Expedition impressed by the value of youth in polar work ; but the five who went

forward from 87° 32′ were all grown men, chosen from a body which was largely recruited on a basis of youth. Four of them were men who were accustomed to take responsibility and to lead others. Four of them had wide sledging experience and were accustomed to cold temperatures. They were none of them likely to get flurried in emergency, to panic under any circumstances, or to wear themselves out by loss of nervous control. Scott and Wilson were the most highly strung of the party: I believe that the anxiety which Scott suffered served as a stimulus against mental monotony rather than as a drain upon his energy. Scott was 43, Wilson 39, Evans 37, Oates 32, and Bowers 28 years old. Bowers was exceptionally old for his age.

In the event of one man crocking a five-man party may be better able to cope with the situation, but with this doubtful exception Scott had nothing to gain and a good deal to lose by taking an extra man to the Pole. That he did so means, I think, that he considered his position a very good one at this time. He was anxious to take as many men with him as possible. I have an impression that he wanted the army represented as well as the navy. Be that as it may, he took five men: he decided to take the extra man at the last moment, and in doing so he added one more link to a chain. But he was content ; and four days after the Last Return Party left them, as he lay out a blizzard, quite warm in his sleeping-bag though the mid-day temperature was − 20°, he wrote a long diary praising his companions very highly indeed "so our five people are perhaps as happily selected as it is possible to imagine."[1] He speaks of Seaman Evans as being a giant worker with a really remarkable headpiece. There is no mention of the party feeling the cold, though they were now at the greatest height of their journey; the food satisfied them thoroughly. There is no shadow of trouble here: only Evans has got a nasty cut on his hand!

There were more disadvantages in this five-man party than you might think. There was $5\frac{1}{2}$ weeks' food for four men : five men would eat this in about four weeks. In

[1] *Scott's Last Expedition*, vol. i. p. 536.

addition to the extra risk of breakdown, there was a certain amount of discomfort involved, for everything was arranged for four men as I have already explained; the tent was a four-man tent, and an inner lining had been lashed to the bamboos making it smaller still: when stretched out for the night the sleeping-bags of the two outside men must have been partly off the floor-cloth, and probably on the snow: their bags must have been touching the inner tent and collecting the rime which was formed there: cooking for five took about half an hour longer in the day than cooking for four—half an hour off your sleep, or half an hour off your march? I do not believe that five men on the lid of a crevasse are as safe as four. Wilson writes that the stow of the sledge with five sleeping-bags was pretty high: this makes it top-heavy and liable to capsize in rough country.

But what would have paralysed anybody except Bowers was the fact that they had only four pairs of ski between the five of them. To slog along on foot, in soft snow, in the middle of four men pulling rhythmically on ski, must have been tiring and even painful; and Birdie's legs were very short. No steady swing for him, and little chance of getting his mind off the job in hand. Scott could never have meant to take on five men when he told his supporting team to leave their ski behind, only four days before he reorganized.

"May I be there!" wrote Wilson of the men chosen to travel the ice-cap to the Pole. "About this time next year may I be there or thereabouts! With so many young bloods in the heyday of youth and strength beyond my own I feel there will be a most difficult task in making choice towards the end." "I should like to have Bill to hold my hand when we get to the Pole," said Scott.

Wilson *was* there and his diary is that of an artist, watching the clouds and mountains, of a scientist observing ice and rock and snow, of a doctor, and above all of a man with good judgment. You will understand that the thing which really interested him in this journey was the acquisition of knowledge. It is a restrained, and for the most

part a simple, record of facts. There is seldom any comment, and when there is you feel that, for this very reason, it carries more weight. Just about this time: "December 24. Very promising, thoroughly enjoyed the afternoon march": "Christmas Day, and a real good and happy one with a very long march": "January 1, 1912. We had only 6 hours' sleep last night by a mistake, but I had mine solid in one piece, actually waking in exactly the same position as I fell asleep in 6 hours before—never moved": "January 2. We were surprised to-day by seeing a Skua gull flying over us—evidently hungry but not weak. Its droppings, however, were clear mucus, nothing in them at all. It appeared in the afternoon and disappeared again about ½ hour after." And then on January 3: "Last night Scott told us what the plans were for the South Pole. Scott, Oates, Bowers, Petty Officer Evans and I are to go to the Pole. Teddie Evans is to return from here to-morrow with Crean and Lashly. Scott finished his week's cooking to-night and I begin mine to-morrow." Just that.

The next day Bowers wrote: "I had my farewell breakfast in the tent with Teddy Evans, Crean and Lashly. After so little sleep the previous night I rather dreaded the march. We gave our various notes, messages and letters to the returning party and started off. They accompanied us for about a mile before returning, to see that all was going well. Our party were on ski with the exception of myself: I first made fast to the central span, but afterwards connected up to the toggle of the sledge, pulling in the centre between the inner ends of Captain Scott's and Dr. Wilson's traces. This was found to be the best place, as I had to go my own step.

"Teddy and party gave us three cheers, and Crean was half in tears. They have a feather-weight sledge to go back with of course, and ought to run down their distance easily.[1] We found we could manage our load easily, and did 6.3 miles before lunch, completing 12.5 by 7.15 P.M.

[1] It is to be noticed that every return party, including the Polar Party, was supposed by their companions to be going to have a very much easier time than, as a matter of fact, they had.—A. C.-G.

Our marching hours are nine per day. It is a long slog with a well-loaded sledge, and more tiring for me than the others, as I have no ski. However, as long as I can do my share all day and keep fit it does not matter much one way or the other.

"We had our first northerly wind on the plateau to-day, and a deposit of snow crystals made the surface like sand latterly on the march. The sledge dragged like lead. In the evening it fell calm, and although the temperature was – 16° it was positively pleasant to stand about outside the tent and bask in the sun's rays. It was our first calm since we reached the summit too. Our socks and other damp articles which we hang out to dry at night become immediately covered with long feathery crystals exactly like plumes. Socks, mitts and finnesko dry splendidly up here during the night. We have little trouble with them compared with spring and winter journeys. I generally spread my bag out in the sun during the 1½ hours of lunch time, which gives the reindeer hair a chance to get rid of the damage done by the deposit of breath and any perspiration during the night." [1]

Plenty of sun, heavy surfaces, iridescent clouds . . . the worst windcut sastrugi I have seen, covered with bunches of crystals like gorse . . . ice blink all round . . . hairy faces and mouths dreadfully iced up on the march . . . hot and sweaty days' work, but sometimes cold hands in the loops of the ski sticks . . . windy streaky cirrus in every direction, all thin and filmy and scrappy . . . horizon clouds all being wafted about. . . . These are some of the impressions here and there in Wilson's diary during the first ten days of the party's solitary march. On the whole he is enjoying himself, I think.

You should read Scott's diary yourself and form your own opinions, but I think that after the Last Return Party left him there is a load off his mind. The thing had worked so far, it was up to *them* now: that great mass of figures and weights and averages, those years of preparation, those months of anxiety—no one of them had been in vain.

[1] Bowers.

They were up to date in distance, and there was a very good amount of food, probably more than was necessary to see them to the Pole and off the plateau on full rations. Best thought of all, perhaps, the motors with their uncertainties, the ponies with their suffering, the glacier with its possibilities of disaster, all were behind : and the two main supporting parties were safely on their way home. Here with him was a fine party, tested and strong, and only 148 miles from the Pole.

I can see them, working with a business-like air, with no fuss and no unnecessary talk, each man knowing his job and doing it : pitching the tent : finishing the camp work and sitting round on their sleeping-bags while their meal was cooked : warming their hands on their mugs : saving a biscuit to eat when they woke in the night : packing the sledge with a good neat stow : marching with a solid swing —we have seen them do it so often, and they did it jolly well.

And the conditions did not seem so bad. " To-night it is flat calm ; the sun so warm that in spite of the temperature we can stand about outside in the greatest comfort. It is amusing to stand thus and remember the constant horrors of our situation as they were painted for us : the sun is melting the snow on the ski, etc. The plateau is now very flat, but we are still ascending slowly. The sastrugi are getting more confused, predominant from the S.E. I wonder what is in store for us. At present everything seems to be going with extraordinary smoothness. . . . We feel the cold very little, the great comfort of our situation is the excellent drying effect of the sun. . . . Our food continues to amply satisfy. What luck to have hit on such an excellent ration. We really are an excellently found party . . . we lie so very comfortably, warmly clothed in our comfortable bags, within our double-walled tent." [1]

Then something happened.

While Scott was writing the sentences you have just read, he reached the summit of the plateau and started, ever so slightly, to go downhill. The list of corrected alti-

[1] *Scott's Last Expedition*, vol. i. pp. 530-534.

tudes given by Simpson in his meteorological report are of great interest: Cape Evans 0, Shambles Camp 170, Upper Glacier Depôt 7151, Three Degree Depôt 9392, One and a Half Degree Depôt 9862, South Pole 9072 feet above sea-level.[1]

What happened is not quite clear, but there is no doubt that the surface became very bad, that the party began to feel the cold, and that before long Evans especially began to crock. The immediate trouble was bad surfaces. I will try and show why these surfaces should have been met in what was, you must remember, now a land which no man had travelled before.

Scott laid his One and a Half Degree Depôt (*i.e.* $1\frac{1}{2}°$ or 90 miles from the Pole) on January 10. That day they started to go down, but for several days before that the plateau had been pretty flat. Time after time in the diaries you find crystals — crystals — crystals : crystals falling through the air, crystals bearding the sastrugi, crystals lying loose upon the snow. Sandy crystals, upon which the sun shines and which made pulling a terrible effort : when the sky clouds over they get along much better. The clouds form and disperse without visible reason. And generally the wind is in their faces.

Wright tells me that there is certain evidence in the records which may explain these crystals. Halos are caused by crystals and nearly all those logged from the bottom of the Beardmore to the Pole and back were on this stretch of country, where the land was falling. Bowers mentions that the crystals did not appear in all directions, which goes to show that the air was not always rising, but sometimes was falling and therefore not depositing its moisture. There is no doubt that the surfaces met were very variable, and it may be that the snow lay in waves. Bowers mentions big undulations for thirty miles before the Pole, and other inequalities may have been there which were not visible. There is sometimes evidence that these crystals were formed on the windward side of these waves, and carried over by a strong wind and deposited on the lee side.

[1] Simpson, *B.A.E., 1910–1913*, "Meteorology," vol. i. p. 291.

It is common knowledge that as you rise in the atmosphere so the pressure decreases: in fact, it is usual to measure your height by reading the barometer. Now the air on this last stretch to the Pole was rising, for the wind was from the south, and, as we have seen, the plateau here was sloping down towards the Pole. The air, driven uphill by this southerly wind, was forced to rise. As it rose it expanded, because the pressure was less. Air which has expanded without any heat being given to it from outside, that is in a heat-proof vessel, is said to expand by adiabatic expansion. Such air tends first to become saturated, and then to precipitate its moisture. These conditions were approximately fulfilled on the plateau, where the air expanded as it rose, but could get little or no heat from outside. The air therefore precipitated its moisture in the form of crystals.

Owing to the rapid changes in surfaces (on one occasion they depôted their ski because they were in a sea of sastrugi, and had to walk back for them because the snow became level and soft again) Scott guessed that the coastal mountains could not be far away, and we now know that the actual distance was only 130 miles. About the same time Scott mentions that he had been afraid that they were weakening in their pulling, but he was reassured by getting a patch of good surface and finding the sledge coming as easily as of old. On the night of January 12, eight days after leaving the Last Return Party, he writes: "At camping to-night every one was chilled and we guessed a cold snap, but to our surprise the actual temperature was higher than last night, when we could dawdle in the sun. It is most unaccountable why we should suddenly feel the cold in this manner: partly the exhaustion of the march, but partly some damp quality in the air, I think. Little Bowers is wonderful; in spite of my protest he *would* take sights after we had camped to-night, after marching in the soft snow all day when we have been comparatively restful on ski."[1] On January 14, Wilson wrote: "A very cold grey thick day with a persistent breeze from the S.S.E. which

[1] *Scott's Last Expedition*, vol. i. p. 540.

we all felt considerably, but temperature was only – 18° at lunch and – 15° in the evening. Now just over 40 miles from the Pole." Scott wrote the same day: "Again we noticed the cold; at lunch to-day all our feet were cold but this was mainly due to the bald state of our finnesko. I put some grease under the bare skin and found it make all the difference. Oates seems to be feeling the cold and fatigue more than the rest of us, but we are all very fit." And on January 15, lunch: "We were all pretty done at camping." [1] And Wilson: "We made a depôt [The Last Depôt] of provisions at lunch time and went on for our last lap with nine days' provision. We went much more easily in the afternoon, and on till 7.30 P.M. The surface was a funny mixture of smooth snow and sudden patches of sastrugi, and we occasionally appear to be on a very gradual down gradient and on a slope down from the west to east." In the light of what happened afterwards I believe that the party was not as fit at this time as might have been expected ten days before, and that this was partly the reason why they felt the cold and found the pulling so hard. The immediate test was the bad surface, and this was the result of the crystals which covered the ground.

Simpson has worked out [2] that there is an almost constant pressure gradient driving the air on the plateau northwards parallel to the 146° E. meridian, and parallel also to the probable edge of the plateau. The mean velocity for the months of this December and January was about 11 miles an hour. During this plateau journey Scott logged wind force 5 and over on 23 occasions, and this wind was in their faces from the Beardmore to the Pole, and at their backs as they returned. A low temperature when it is calm is paradise compared to a higher temperature with a wind, and it is this constant pitiless wind, combined with the altitude and low temperatures, which has made travelling on the Antarctic plateau so difficult.

While the mean velocity of wind during the two midsummer months seems to be fairly constant, there is a very

[1] *Scott's Last Expedition*, vol. i. pp. 541-542.
[2] Simpson, *B.A.E., 1910–1913*, "Meteorology," vol. i. pp. 144-146.

rapid fall of temperature in January. The mean actual temperature found on the plateau this year in December was - 8.6°, the minimum observed being - 19.3°. Simpson remarks that "it must be accounted as one of the wonders of the Antarctic that it contains a vast area of the earth's surface where the mean temperature during the warmest month is more than 8° below the Fahrenheit zero, and when throughout the month the highest temperature was only + 5.5° F." [1] But the mean temperature on the plateau dropped 10° in January to - 18.7°, the minimum observed being - 29.7°. These temperatures have to be combined with the wind force described above to imagine the conditions of the march. In the light of Scott's previous plateau journey [2] and Shackleton's Polar Journey [3] this wind was always expected by our advance parties. But there can be no doubt that the temperature falls as solar radiation decreases more rapidly than was generally supposed. Scott probably expected neither such a rapid fall of temperature, nor the very bad surfaces, though he knew that the plateau would mean a trying time, and indeed it was supposed that it would be much the hardest part of the journey.

On the night of January 15, Scott wrote "it ought to be a certain thing now, and the only appalling possibility the sight of the Norwegian flag forestalling ours." [4] They were 27 miles from the Pole.

The story of the next three days is taken from Wilson's diary:

"*January* 16. We got away at 8 A.M. and made 7.5 miles by 1.15, lunched, and then in 5.3 miles came on a black flag and the Norwegians' sledge, ski, and dog tracks running about N.E. and S.W. both ways. The flag was of black bunting tied with string to a fore-and-after which had evidently been taken off a finished-up sledge. The age of the tracks was hard to guess but probably a couple of weeks —or three or more. The flag was fairly well frayed at the

[1] Simpson, *B.A.E., 1910–1913*, "Meteorology," vol. i. p. 41.
[2] See pp. xxxviii-xxxix.
[3] See p. xlvii.
[4] *Scott's Last Expedition*, vol. i. p. 543.

edges. We camped here and examined the tracks and discussed things. The surface was fairly good in the forenoon, – 23° temperature, and all the afternoon we were coming downhill with again a rise to the W., and a fall and a scoop to the east where the Norwegians came up, evidently by another glacier."

"*January* 17. We camped on the Pole itself at 6.30 P.M. this evening. In the morning we were up at 5 A.M. and got away on Amundsen's tracks going S.S.W. for three hours, passing two small snow cairns, and then, finding the tracks too much snowed up to follow, we made our own bee-line for the Pole: camped for lunch at 12.30 and off again from 3 to 6.30 P.M. It blew from force 4 to 6 all day in our teeth with temperature – 22°, the coldest march I ever remember. It was difficult to keep one's hands from freezing in double woollen and fur mitts. Oates, Evans, and Bowers all have pretty severe frost-bitten noses and cheeks, and we had to camp early for lunch on account of Evans' hands. It was a very bitter day. Sun was out now and again, and observations taken at lunch, and before and after supper, and at night, at 7 P.M. and at 2 A.M. by our time. The weather was not clear, the air was full of crystals driving towards us as we came south, and making the horizon grey and thick and hazy. We could see no sign of cairn or flag, and from Amundsen's direction of tracks this morning he has probably hit a point about 3 miles off. We hope for clear weather to-morrow, but in any case are all agreed that he can claim prior right to the Pole itself. He has beaten us in so far as he made a race of it. We have done what we came for all the same and as our programme was made out. From his tracks we think there were only 2 men, on ski, with plenty of dogs on rather low diet. They seem to have had an oval tent. We sleep one night at the Pole and have had a double hoosh with some last bits of chocolate, and X's cigarettes have been much appreciated by Scott and Oates and Evans. A tiring day: now turning into a somewhat starchy frozen bag. To-morrow we start for home and shall do our utmost to get back in time to send the news to the ship."

E. A. Wilson, del.

AMUNDSEN'S POLHEIM

"*January* 18. Sights were taken in the night, and at about 5 A.M. we turned out and marched from this night camp about $3\frac{3}{4}$ miles back in a S.E.ly direction to a spot which we judged from last night's sights to be the Pole. Here we lunched camp: built a cairn: took photos: flew the Queen Mother's Union Jack and all our own flags. We call this the Pole, though as a matter of fact we went $\frac{1}{2}$ mile farther on in a S. easterly direction after taking further sights to the actual final spot, and here we left the Union Jack flying. During the forenoon we passed the Norwegians' last southerly camp: they called it Polheim and left here a small tent with Norwegian and Fram flags flying, and a considerable amount of gear in the tent: half reindeer sleeping-bags, sleeping-socks, reinskin trousers 2 pair, a sextant, and artif[icial] horizon, a hypsometer with all the thermoms broken, etc. I took away the spirit-lamp of it, which I have wanted for sterilizing and making disinfectant lotions of snow. There were also letters there: one from Amundsen to King Haakon, with a request that Scott should send it to him. There was also a list of the five men who made up their party, but no news as to what they had done. I made some sketches here, but it was blowing very cold, −22°. Birdie took some photos. We found no sledge there though they said there was one: it may have been buried in drift. The tent was a funny little thing for 2 men, pegged out with white line and tent-pegs of yellow wood. I took some strips of blue-grey silk off the tent seams: it was perished. The Norskies had got to the Pole on December 16, and were here from 15th to 17th. At our lunch South Pole Camp we saw a sledge-runner with a black flag about $\frac{1}{2}$ mile away blowing from it. Scott sent me on ski to fetch it, and I found a note tied to it showing that this was the Norskies' actual final Pole position. I was given the flag and the note with Amundsen's signature, and I got a piece of the sledge-runner as well. The small chart of our wanderings shows best how all these things lie. After lunch we made 6.2 miles from the Pole Camp to the north again, and here we are camped for the night." [1]

[1] Wilson.

The following remarks on the South Pole area were written by Bowers in the Meteorological Log, apparently on January 17 and 18: "Within 120 miles of the South Pole the sastrugi crossed seem to indicate belts of certain prevalent winds. These were definitely S.E.ly. up to about Lat. 78° 30′ S., where the summit was passed and we started to go definitely downhill toward the Pole. An indefinite area was then crossed S.E.ly, S.ly and S.W.ly sastrugi. Later, in about 79° 30′ S., those from the S.S.W. predominated. At this point also the surface of the ice-cap became affected by undulations running more or less at right angles to our course. These resolved themselves into immense waves some miles in extent,[1] with a uniform surface both in hollow and crust. The whole surface was carpeted with a deposit of ice-crystals which, while we were there, fell sometimes in the form of minute spicules and sometimes in plates. These caused an almost continuous display of parhelia.

"The flags left a month previously by the Norwegian expedition were practically undamaged and so could not have been exposed to very heavy wind during that time. Their sledging and ski tracks, where marked, were raised slightly, also the dogs' footprints. In the neighbourhood of their South Pole Camp the drifts were S.W.ly, but there was one S.S.E. drift to leeward of tent. They had pitched their tent to allow for S.W.ly wind. For walking on foot the ground was all pretty soft, and on digging down the crystalline structure of the snow was found to alter very little, and there were no layers of crust such as are found on the Barrier. The snow seems so lightly put together as not to cohere, and makes very little water for its bulk when melted. The constant and varied motion of cirrus, and the forming and motion of radiant points, shows that in the upper atmosphere at this time of the year there is little or no tranquillity." [2]

That is the bare bones of what was without any possible doubt a great shock. Consider! These men had been out

[1] Evidently meaning some miles from crest to crest.
[2] Bowers, *Polar Meteorological Log*.

2½ months and were 800 miles from home. The glacier had been a heavy grind: the plateau certainly not worse, probably better, than was expected, as far as that place where the Last Return Party left them. But then, in addition to a high altitude, a head wind, and a temperature which averaged −18.7°, came this shower of ice-crystals, turning the surface to sand, especially when the sun was out. They were living in cirrus clouds, and the extraordinary state seems to have obtained that the surface of the snow was colder when the sun was shining than when clouds checked the radiation from it. They began to descend. Things began to go not quite right: they felt the cold, especially Oates and Evans: Evans' hands also were wrong—ever since the seamen made that new sledge. The making of that sledge must have been fiercely cold work: one of the hardest jobs they did. I am not sure that enough notice has been taken of that.

And then: "The Norwegians have forestalled us and are first at the Pole. It is a terrible disappointment, and I am very sorry for my loyal companions. Many thoughts come and much discussion have we had. To-morrow we must march on to the Pole and then hasten home with all the speed we can compass. All the day-dreams must go; it will be a wearisome return." "The Pole. Yes, but under very different circumstances from those expected . . . companions labouring on with cold feet and hands. . . . Evans had such cold hands we camped for lunch . . . the wind is blowing hard, T. −21°, and there is that curious damp, cold feeling in the air which chills one to the bone in no time. . . . Great God! this is an awful place. . . ."[1]

This is not a cry of despair. It is an ejaculation provoked by the ghastly facts. Even now in January the temperature near the South Pole is about 24° lower than it is during the corresponding month of the year (July) near the North Pole,[2] and if it is like this in mid-summer, what is it like in mid-winter? At the same time it was, with the exception of the sandy surfaces, what they had looked for,

[1] *Scott's Last Expedition*, vol. i. pp. 543-544.
[2] Simpson, *B.A.E., 1910–1913*, "Meteorology," vol. i. p. 40.

and every detail of organization was working out as well as if not better than had been expected.

Bowers was so busy with the meteorological log and sights which were taken in terribly difficult circumstances that he kept no diary until they started back. Then he wrote on seven consecutive days, as follows :

"*January* 19. A splendid clear morning with a fine S.W. wind blowing. During breakfast time I sewed a flap attachment on to the hood of my green hat so as to prevent the wind from blowing down my neck on the march. We got up the mast and sail on the sledge and headed north, picking up Amundsen's cairn and our outgoing tracks shortly afterwards. Along these we travelled till we struck the other cairn and finally the black flag where we had made our 58th outward camp. We then with much relief left all traces of the Norwegians behind us, and headed on our own track till lunch camp, when we had covered eight miles.

"In the afternoon we passed No. 2 cairn of the British route, and fairly slithered along before a fresh breeze. It was heavy travelling for me, not being on ski, but one does not mind being tired if a good march is made. We did sixteen [miles] altogether for the day, and so should pick up our Last Depôt to-morrow afternoon. The weather became fairly thick soon after noon, and at the end of the afternoon there was considerable drift, with a mist caused by ice-crystals, and parhelion."

"*January* 20. Good sailing breeze again this morning. It is a great pleasure to have one's back to the wind instead of having to face it. It came on thicker later, but we sighted the Last Depôt soon after 1 P.M. and reached it at 1.45 P.M. The red flag on the bamboo pole was blowing out merrily to welcome us back from the Pole, with its supply of necessaries of life below. We are absolutely dependent upon our depôts to get off the plateau alive, and so welcome the lonely little cairns gladly. At this one, called the Last Depôt, we picked up four days' food, a can of oil, some methylated spirit (for lighting purposes) and some personal gear we had left there. The bamboo was bent on to the floor-cloth as a yard for our sail instead of a

broken sledge-runner of Amundsen's which we had found at the Pole and made a temporary yard of.

"As we had marched extra long in the forenoon in order to reach the depôt, our afternoon march was shorter than usual. The wind increased to a moderate gale with heavy gusts and considerable drift. We should have had a bad time had we been facing it. After an hour I had to shift my harness aft so as to control the motions of the sledge. Unfortunately the surface got very sandy latterly, but we finished up with 16.1 miles to our credit and camped in a stiff breeze, which resolved itself into a blizzard a few hours later. I was glad we had our depôt safe."

"*January* 21. Wind increased to force 8 during night with heavy drift. In the morning it was blizzing like blazes and marching was out of the question. The wind would have been of great assistance to us, but the drift was so thick that steering a course would have been next to impossible. We decided to await developments and get under weigh as soon as it showed any signs of clearing. Fortunately it was shortlived, and instead of lasting the regulation two days it eased up in the afternoon, and 3.45 found us off with our sail full. It was good running on ski but soft plodding for me on foot. I shall be jolly glad to pick up my dear old ski. They are nearly 200 miles away yet, however. The breeze fell altogether latterly and I shifted up into my old place as middle number of the five. Our distance completed was 5.5 miles, when camp was made again. Our old cairns are of great assistance to us, also the tracks, which are obliterated in places by heavy drift and hard sastrugi, but can be followed easily."

"*January* 22. We came across Evans' sheepskin boots this morning. They were almost covered up after their long spell since they fell off the sledge [on January 11]. The breeze was fair from the S.S.W. but got lighter and lighter. At lunch camp we had completed 8.2 miles. In the afternoon the breeze fell altogether, and the surface, acted on by the sun, became perfect sawdust. The light sledge pulled by five men came along like a drag without a particle of slide or give. We were all glad to camp soon

after 7 P.M. I think we were all pretty tired out. We did altogether 19.5 miles for the day. We are only thirty miles from the 1½ Degree Depôt, and should reach it in two marches with any luck." [The minimum temperature this night was – 30° (uncorrected).]

"*January* 23. Started off with a bit of a breeze which helped us a little [temperature – 28°]. After the first two hours it increased to force 4, S.S.W., and filling the sail we sped along merrily, doing 8¾ miles before lunch. In the afternoon it was even stronger, and I had to go back on the sledge and act as guide and brakesman. We had to lower the sail a bit, but even then she ran like a bird.

"We are picking up our old cairns famously. Evans got his nose frost-bitten, not an unusual thing with him, but as we were all getting pretty cold latterly we stopped at a quarter to seven, having done 16½ miles. We camped with considerable difficulty owing to the force of the wind."[1]

The same night Scott wrote: "We came along at a great pace, and should have got within an easy march of our [One and a Half Degree] Depôt had not Wilson suddenly discovered that Evans' nose was frost-bitten—it was white and hard. We thought it best to camp at 6.45. Got the tent up with some difficulty, and now pretty cosy after good hoosh.

"There is no doubt Evans is a good deal run down—his fingers are badly blistered and his nose is rather seriously congested with frequent frost-bites. He is very much annoyed with himself, which is not a good sign. I think Wilson, Bowers and I are as fit as possible under the circumstances. Oates gets cold feet. One way and another I shall be glad to get off the summit! . . . The weather seems to be breaking up." [2]

Bowers resumes the tale:

"*January* 24. Evans has got his fingers all blistered with frost-bites, otherwise we are all well, but thinning, and in spite of our good rations get hungrier daily. I sometimes spend much thought on the march with plans for making a pig of myself on the first opportunity. As that

[1] Bowers. [2] *Scott's Last Expedition*, vol. i. pp. 550-551.

will be after a further march of 700 miles they are a bit premature.

"It was blowing a gale when we started and it increased in force. Finally with the sail half down, one man detached tracking ahead and Titus and I breaking back, we could not always keep the sledge from overrunning. The blizzard got worse and worse till, having done only seven miles, we had to camp soon after twelve o'clock. We had a most difficult job camping, and it has been blowing like blazes all the afternoon. I think it is moderating now, 9 P.M. We are only seven miles from our depôt and this delay is exasperating." [1]

[Scott wrote: "This is the second full gale since we left the Pole. I don't like the look of it. Is the weather breaking up? If so, God help us, with the tremendous summit journey and scant food. Wilson and Bowers are my stand-by. I don't like the easy way in which Oates and Evans get frost-bitten." [2]]

"*January* 25. It was no use turning out at our usual time (5.45 A.M.), as the blizzard was as furious as ever; we therefore decided on a late breakfast and no lunch unless able to march. We have only three days' food with us and shall be in Queer Street if we miss the depôt. Our bags are getting steadily wetter, so are our clothes. It shows a tendency to clear off now (breakfast time) so, D.V., we may march after all. I am in tribulation as regards meals now as we have run out of salt, one of my favourite commodities. It is owing to Atkinson's party taking back an extra tin by mistake from the Upper Glacier Depôt. Fortunately we have some depôted there, so I will only have to endure another two weeks without it.

"10 P.M.—We have got in a march after all, thank the Lord. Assisted by the wind we made an excellent rundown to our One and a Half Degree Depôt, where the big red flag was blowing out like fury with the breeze, in clouds of driving drift. Here we picked up $1\frac{1}{4}$ cans of oil and one week's food for five men, together with some personal gear depôted. We left the bamboo and flag on the cairn. I was

[1] Bowers.

[2] *Scott's Last Expedition*, vol. i. p. 552.

much relieved to pick up the depôt : now we only have one other source of anxiety on this endless snow summit, viz. the Three Degree Depôt in latitude 86° 56′ S.

"In the afternoon we did 5.2 miles. It was a miserable march, blizzard all the time and our sledge either sticking in sastrugi or overrunning the traces. We had to lower the sail half down, and Titus and I hung on to her. It was most strenuous work, as well as much colder than pulling ahead. Most of the time we had to brake back with all our strength to keep the sledge from overrunning. Bill got a bad go of snow glare from following the track without goggles on.

"This day last year we started the Depôt Journey. I did not think so short a time would turn me into an old hand at polar travelling, neither did I imagine at the time that I would be returning from the Pole itself." [1]

Wilson was very subject to these attacks of snow blindness, and also to headaches before blizzards. I have an idea that his anxiety to sketch whenever opportunity offered, and his willingness to take off his goggles to search for tracks and cairns, had something to do with it. This attack was very typical. "I wrote this at lunch and in the evening had a bad attack of snow blindness." . . . "Blizzard in afternoon. We only got in a forenoon march. Couldn't see enough of the tracks to follow at all. My eyes didn't begin to trouble me till to-morrow [yesterday], though it was the strain of tracking and the very cold drift which we had to-day that gave me this attack of snow glare." . . . "Marched on foot in the afternoon as my eyes were too bad to go on ski. We had a lot of drift and wind and very cold. Had $ZuSO_4$ and cocaine in my eyes at night and didn't get to sleep at all for the pain—dozed about an hour in the morning only." . . . "Marched on foot again all day as I couldn't see my way on ski at all, Birdie used my ski. Eyes still very painful and watering. Tired out by the evening, had a splendid night's sleep, and though very painful across forehead to-night they are much better." [2]

The surface was awful : in his diary of the day after

[1] Bowers. [2] Wilson.

they left the Pole (January 19) Wilson wrote an account of it. "We had a splendid wind right behind us most of the afternoon and went well until about 6 P.M. when the sun came out and we had an awful grind until 7.30 when we camped. The sun comes out on sandy drifts, all on the move in the wind, and temp. – 20°, and gives us an absolutely awful surface with no glide at all for ski or sledge, and just like fine sand. The weather all day has been more or less overcast with white broken alto-stratus, and for 3 degrees above the horizon there is a grey belt looking like a blizzard of drift, but this in reality is caused by a constant fall of minute snow crystals, very minute. Sometimes instead of crystal plates the fall is of minute agglomerate spicules like tiny sea-urchins. The plates glitter in the sun as though of some size, but you can only just see them as pin-points on your burberry. So the spicule collections are only just visible. Our hands are never warm enough in camp to do any neat work now. The weather is always uncomfortably cold and windy, about – 23°, but after lunch to-day I got a bit of drawing done." [1]

All the joy had gone from their sledging. They were hungry, they were cold, the pulling was heavy, and two of them were not fit. As long ago as January 14 Scott wrote that Oates was feeling the cold and fatigue more than the others [2] and again he refers to the matter on January 20.[3] On January 19 Wilson wrote: "We get our hairy faces and mouths dreadfully iced up on the march, and often one's hands very cold indeed holding ski-sticks. Evans, who cut his knuckle some days ago at the last depôt, has a lot of pus in it to-night." January 20: "Evans has got 4 or 5 of his finger-tips badly blistered by the cold. Titus also his nose and cheeks—al[so] Evans and Bowers." January 28: "Evans has a number of badly blistered finger-ends which he got at the Pole. Titus' big toe is turning blue-black." January 31: "Evans' finger-nails all coming off, very raw and sore." February 4: "Evans is feeling the cold a lot, always getting frost-bitten. Titus' toes are blackening, and his nose and cheeks are dead yellow.

[1] Wilson. [2] *Scott's Last Expedition*, vol. i. p. 541. [3] *Ibid.* p. 549.

Dressing Evans' fingers every other day with boric vaseline: they are quite sweet still." February 5: "Evans' fingers suppurating. Nose very bad [hard] and rotten-looking."[1]

Scott was getting alarmed about Evans, who "has dislodged two finger-nails to-night; his hands are really bad, and, to my surprise, he shows signs of losing heart over it. He hasn't been cheerful since the accident."[2] "The party is not improving in condition, especially Evans, who is becoming rather dull and incapable." "Evans' nose is almost as bad as his fingers. He is a good deal crocked up."[3]

Bowers' diary, quoted above, finished on January 25, on which day they picked up their One and a Half Degree Depôt. "I shall sleep much better with our provision bag full again," wrote Scott that night. "Bowers got another rating sight to-night—it was wonderful how he managed to observe in such a horribly cold wind." They marched 16 miles the next day, but got off the outward track, which was crooked. On January 27 they did 14 miles on a "very bad surface of deep-cut sastrugi all day, until late in the afternoon when we began to get out of them."[4] "By Jove, this is tremendous labour," said Scott.

They were getting into the better surfaces again: 15.7 miles for January 28, "a fine day and a good march on very decent surface."[5] On January 29 Bowers wrote his last full day's diary: "Our record march to-day. With a good breeze and improving surface we were soon in among the double tracks where the supporting party left us. Then we picked up the memorable camp where I transferred to the advance party. How glad I was to change over. The camp was much drifted up and immense sastrugi were everywhere, S.S.E. in direction and S.E. We did 10.4 miles before lunch. I was breaking back on sledge and controlling; it was beastly cold and my hands were perished. In the afternoon I put on my dogskin mitts and was far more comfortable. A stiff breeze with drift continues:

[1] Wilson. [2] *Scott's Last Expedition*, vol. i. p. 557.
[3] *Ibid.* pp. 560, 561. [4] Wilson. [5] *Ibid.*

temperature – 25°. Thank God our days of having to face it are over. We completed 19.5 miles [22 statute] this evening, and so are only 29 miles from our precious [Three Degree] Depôt. It will be bad luck indeed if we do not get there in a march and a half anyhow." [1]

Nineteen miles again on January 30, but during the previous day's march Wilson had strained a tendon in his leg. "I got a nasty bruise on the Tib[ialis] ant[icus] which gave me great pain all the afternoon." "My left leg exceedingly painful all day, so I gave Birdie my ski and hobbled alongside the sledge on foot. The whole of the Tibialis anticus is swollen and tight, and full of teno synovitis, and the skin red and oedematous over the shin. But we made a very fine march with the help of a brisk breeze." January 31 : "Again walking by the sledge with swollen leg but not nearly so painful. We had 5.8 miles to go to reach our Three Degree Depôt. Picked this up with a week's provision and a line from Evans, and then for lunch an extra biscuit each, making 4 for lunch and 1/10 whack of butter extra as well. Afternoon we passed cairn where Birdie's ski had been left. These we picked up and came on till 7.30 P.M. when the wind which had been very light all day dropped, and with temp. – 20° it felt delightfully warm and sunny and clear. We have 1/10 extra pemmican in the hoosh now also. My leg pretty swollen again to-night." [2] They travelled 13.5 miles that day, and 15.7 on the next. "My leg much more comfortable, gave me no pain, and I was able to pull all day, holding on to the sledge. Still some oedema. We came down a hundred feet or so to-day on a fairly steep gradient." [3]

They were now approaching the crevassed surfaces and the ice-falls which mark the entrance to the Beardmore Glacier, and February 2 was marked by another accident, this time to Scott. "On a very slippery surface I came an awful 'purler' on my shoulder. It is horribly sore to-night and another sick person added to our tent—three out of five injured, and the most troublesome surfaces to come. We shall be lucky if we get through without serious injury.

[1] Bowers. [2] Wilson. [3] *Ibid.*

Wilson's leg is better, but might easily get bad again, and Evans' fingers. . . . We have managed to get off 17 miles. The extra food is certainly helping us, but we are getting pretty hungry. The weather is already a trifle warmer, the altitude lower and only 80 miles or so to Mount Darwin. It is time we were off the summit.—Pray God another four days will see us pretty well clear of it. Our bags are getting very wet and we ought to have more sleep." [1]

They had been spending some time in finding the old tracks. But they had a good landfall for the depôt at the top of the glacier and on February 3 they decided to push on due north, and to worry no more for the present about tracks and cairns. They did 16 miles that day. Wilson's diary runs : " Sunny and breezy again. Came down a series of slopes, and finished the day by going up one. Enormous deep-cut sastrugi and drifts and shiny egg-shell surface. Wind all S.S.E.ly. To-day at about 11 P.M. we got our first sight again of mountain peaks on our eastern horizon. . . . We crossed the outmost line of crevassed ridge top to-day, the first on our return.

"*February* 4. 18 miles. Clear cloudless blue sky, surface drift. During forenoon we came down gradual descent including 2 or 3 irregular terrace slopes, on crest of one of which were a good many crevasses. Southernmost were just big enough for Scott and Evans to fall in to their waists, and very deceptively covered up. They ran east and west. Those nearer the crest were the ordinary broad street-like crevasses, well lidded. In the afternoon we again came to a crest, before descending, with street crevasses, and one we crossed had a huge hole where the lid had fallen in, big enough for a horse and cart to go down. We have a great number of mountain tops on our right and south of our beam as we go due north now. We are now camped just below a great crevassed mound, on a mountain top evidently."

"*February* 5. 18.2 miles. We had a difficult day, getting in amongst a frightful chaos of broad chasm-like crevasses. We kept too far east and had to wind in and out

[1] *Scott's Last Expedition*, vol. i. p. 559.

BUCKLEY ISLAND

WHERE THE FOSSILS WERE FOUND

amongst them and cross multitudes of bridges. We then bore west a bit and got on better all the afternoon and got round a good deal of the upper disturbances of the falls here."

[Scott wrote: "We are camped in a very disturbed region, but the wind has fallen very light here, and our camp is comfortable for the first time for many weeks."[1]]

"*February* 6. 15 miles. We again had a forenoon of trying to cut corners. Got in amongst great chasms running E. and W. and had to come out again. We then again kept west and downhill over tremendous sastrugi, with a slight breeze, very cold. In afternoon continued bearing more and more towards Mount Darwin: we got round one of the main lines of ice-fall and looked back up to it. . . . Very cold march: many crevasses: I walking by the sledge on foot found a good many: the others all on ski."

"*February* 7. 15.5 miles. Clear day again and we made a tedious march in the forenoon along a flat or two, and down a long slope: and then in the afternoon we had a very fresh breeze, and very fast run down long slopes covered with big sastrugi. It was a strenuous job steering and checking behind by the sledge. We reached the Upper Glacier Depôt by 7.30 P.M. and found everything right."[2]

This was the end of the plateau: the beginning of the glacier. Their hard time should be over so far as the weather was concerned. Wilson notes how fine the land looked as they approached it: "The colour of the Dominion Range rock is in the main all brown madder or dark reddish chocolate, but there are numerous bands of yellow rock scattered amongst it. I think it is composed of dolerite and sandstone as on the W. side."[3]

The condition of the party was of course giving anxiety: how much it is impossible to say. A good deal was to be hoped from the warm weather ahead. Scott and Bowers were probably the fittest men. Scott's shoulder soon mended and "Bowers is splendid, full of energy and

[1] *Scott's Last Expedition*, vol. i. p. 561. [2] Wilson. [3] *Ibid.*

bustle all the time."[1] Wilson was feeling the cold more than either of them now. His leg was not yet well enough to wear ski. Oates had suffered from a cold foot for some time. Evans, however, was the only man whom Scott seems to have been worried about. "His cuts and wounds suppurate, his nose looks very bad, and altogether he shows considerable signs of being played out." . . . "Well, we have come through our seven weeks' ice-cap journey and most of us are fit, but I think another week might have had a very bad effect on P.O. Evans, who is going steadily downhill."[2] They had all been having extra food which had helped them much, though they complained of hunger and want of sleep. Directly they got into the warmer weather on the glacier their food satisfied them, "but we must march to keep on the full ration, and we want rest, yet we shall pull through all right, D.V. We are by no means worn out."[3]

There are no germs in the Antarctic, save for a few isolated specimens which almost certainly come down from civilization in the upper air currents. You can sleep all night in a wet bag and clothing, and sledge all day in a mail of ice, and you will not catch a cold nor get any aches. You can get deficiency diseases, like scurvy, for inland this is a deficiency country, without vitamines. You can also get poisoned if you allow your food to remain thawed out too long, and if you do not cover the provisions in a depôt with enough snow the sun will get at them, even though the air temperature is far below freezing. But it is not easy to become diseased.

On the other hand, once something does go wrong it is the deuce and all to get it right: especially cuts. And the isolation of the polar traveller may place him in most difficult circumstances. There are no ambulances and hospitals, and a man on a sledge is a very serious weight. Practically any man who undertakes big polar journeys must face the possibility of having to commit suicide to save his companions, and the difficulty of this must not be overrated, for it is in some ways more desirable to die than to

[1] *Scott's Last Expedition*, vol. i. p. 561. [2] *Ibid.* pp. 562, 563. [3] *Ibid.* p. 566.

live, if things are bad enough: we got to that stage on the Winter Journey. I remember discussing this question with Bowers, who had a scheme of doing himself in with a pick-axe if necessity arose, though how he could have accomplished it I don't know: or, as he said, there might be a crevasse and at any rate there was the medical case. I was horrified at the time: I had never faced the thing out with myself like that.

They left the Upper Glacier Depôt under Mount Darwin on February 8. This day they collected the most important of those geological specimens to which, at Wilson's special request, they clung to the end, and which were mostly collected by him. Mount Darwin and Buckley Island, which are really the tops of high mountains, stick out of the ice at the top of the glacier, and the course ran near to both of them, but not actually up against them. Shackleton found coal on Buckley Island, and it was clear that the place was of great geological importance, for it was one of the only places in the Antarctic where fossils could be found, so far as we knew. The ice-falls stretched away as far as you could see towards the mountains which bound the glacier on either side, and as you looked upwards towards Buckley Island they were like a long breaking wave. One of the great difficulties about the Beardmore was that you saw the ice-falls as you went up, and avoided them, but coming down you knew nothing of their whereabouts until you fell into the middle of pressure and crevasses, and then it was almost impossible to say whether you should go right or left to get out.

Evans was unable to pull this day, and was detached from the sledge, but this was not necessarily a very serious sign: Shackleton on his return journey was not able to pull at this place. Wilson wrote as follows:

"*February* 8, *Mt. Buckley Cliffs.* A very busy day. We had a very cold forenoon march, blowing like blazes from the S. Birdie detached and went on ski to Mt. Darwin and collected some dolerite, the only rock he could see on the Nunatak, which was nearest. We got into a sort of crusted surface where the snow broke through nearly to our knees

and the sledge-runner also. I thought at first we were all on a thinly bridged crevasse. We then came on east a bit, and gradually got worse and worse going over an ice-fall, having great trouble to prevent sledge taking charge, but eventually got down and then made N.W. or N. into the land, and camped right by the moraine under the great sandstone cliffs of Mt. Buckley, out of the wind and quite warm again: it was a wonderful change. After lunch we all geologized on till supper, and I was very late turning in, examining the moraine after supper. Socks, all strewn over the rocks, dried splendidly. Magnificent Beacon sandstone cliffs. Masses of limestone in the moraine, and dolerite crags in various places. Coal seams at all heights in the sandstone cliffs, and lumps of weathered coal with fossil vegetable. Had a regular field-day and got some splendid things in the short time."

"*February* 9, *Moraine visit.* We made our way along down the moraine, and at the end of Mt. Buckley [I] unhitched and had half an hour over the rocks and again got some good things written up in sketch-book. We then left the moraine and made a very good march on rough blue ice all day with very small and scarce scraps of névé, on one of which we camped for the night with a rather overcast foggy sky, which cleared to bright sun in the night. We are all thoroughly enjoying temps. of +10° or thereabouts now, with no wind instead of the summit winds which are incessant with temp. −20°."

"*February* 10. ?16 m. We made a very good forenoon march from 10 to 2.45 towards the Cloudmaker. Weather overcast gradually obscured everything in snowfall fog, starting with crystals of large size. . . . We had to camp after 2½ hours' afternoon march as it got too thick to see anything and we were going downhill on blue ice. . . ." [1]

The next day in bad lights and on a bad surface they fell into the same pressure which both the other returning parties experienced. Like them they were in the middle of it before they realized. "Then came the fatal decision to steer east. We went on for 6 hours, hoping to do a good

[1] Wilson.

Emery Walker Limited Co[illegible]pers

distance, which I suppose we did, but for the last hour or two we pressed on into a regular trap. Getting on to a good surface we did not reduce our lunch meal, and thought all going well, but half an hour after lunch we got into the worst ice mess I have ever been in. For three hours we plunged on on ski, first thinking we were too much to the right, then too much to the left; meanwhile the disturbance got worse and my spirits received a very rude shock. There were times when it seemed almost impossible to find a way out of the awful turmoil in which we found ourselves. . . . The turmoil changed in character, irregular crevassed surface giving way to huge chasms, closely packed and most difficult to cross. It was very heavy work, but we had grown desperate. We won through at 10 P.M., and I write after 12 hours on the march. . . ."[1]

Wilson continues the story:

"*February* 12. We had a good night just outside the ice-falls and disturbances, and a small breakfast of tea, thin hoosh and biscuit, and began the forenoon by a decent bit of travelling on rubbly blue ice in crampons: then plunged into an ice-fall and wandered about in it for hours and hours."

"*February* 13. We had one biscuit and some tea after a night's sleep on very hard and irregular blue ice amongst the ice-fall crevasses. No snow on the tent, only ski, etc. Got away at 10 A.M. and by 2 P.M. found the depôt, having had a good march over very hard rough blue ice. Only ½ hour in the disturbance of yesterday. The weather was very thick, snowing and overcast, could only just see the points of bearing for depôt. However, we got there, tired and hungry, and camped and had hoosh and tea and 3 biscuits each. Then away again with our three and a half days' food from this red flag depôt and off down by the Cloudmaker moraine. We travelled about 4 hours on hard blue ice, and I was allowed to geologize the last hour down the two outer lines of boulders. The outer one all dolerite and quartz rocks, the inner all dolerite and sandstone. . . . We camped on the inner line of boulders, weather clearing all the afternoon."[2]

[1] *Scott's Last Expedition*, vol. i. p. 567.

[2] Wilson.

Meanwhile both Wilson and Bowers had been badly snow-blind, though Wilson does not mention it in his diary; and this night Scott says Evans had no power to assist with camping work. A good march followed on February 14, but "there is no getting away from the fact that we are not pulling strong. Probably none of us: Wilson's leg still troubles him and he doesn't like to trust himself on ski; but the worst case is Evans, who is giving us serious anxiety. This morning he suddenly disclosed a huge blister on his foot. It delayed us on the march, when he had to have his crampon readjusted. Sometimes I feel he is going from bad to worse, but I trust he will pick up again when we come to steady work on ski like this afternoon. He is hungry and so is Wilson. We can't risk opening out our food again, and as cook at present I am serving something under full allowance. We are inclined to get slack and slow with our camping arrangement, and small delays increase. I have talked of the matter to-night and hope for improvement. We cannot do distance without the hours." [1]

There was something wrong with this party: more wrong, I mean, than was justified by the tremendous journey they had already experienced. Except for the blizzard at the bottom of the Beardmore and the surfaces near the Pole it had been little worse than they expected. Evans, however, who was considered by Scott to be the strongest man of the party, had already collapsed, and it is admitted that the rest of the party was becoming far from strong. There seems to be an unknown factor here somewhere.

Wilson's diary continues: "*February* 15. 13¾ *m. geog.* I got on ski again first time since damaging my leg and was on them all day for 9 hours. It was a bit painful and swelled by the evening, and every night I put on snow poultice. We are not yet abreast of Mt. Kyffin, and much discussion how far we are from the Lower Glacier Depôt, probably 18 to 20 m.: and we have to reduce food again, only one biscuit to-night with a thin hoosh of pemmican. To-morrow we have to make one day's food which remains

[1] *Scott's Last Expedition*, vol. i. pp. 570-571.

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last over the two. The weather became heavily overcast during the afternoon and then began to snow, and though we got in our 4 hours' march it was with difficulty, and we only made a bit over 5 miles. However, we are nearer the depôt to-night."

"*February* 16. 12½ *m. geog.* Got a good start in fair weather after one biscuit and a thin breakfast, and made 7½ m. in the forenoon. Again the weather became overcast and we lunched almost at our old bearing on Kyffin of lunch Dec. 15. All the afternoon the weather became thick and thicker and after 3¼ hours Evans collapsed, sick and giddy, and unable to walk even by the sledge on ski, so we camped. Can see no land at all anywhere, but we must be getting pretty near the Pillar Rock. Evans' collapse has much to do with the fact that he has never been sick in his life and is now helpless with his hands frost-bitten. We had thin meals for lunch and supper."

"*February* 17. The weather cleared and we got away for a clear run to the depôt and had gone a good part of the way when Evans found his ski shoes coming off. He was allowed to readjust and continue to pull, but it happened again, and then again, so he was told to unhitch, get them right, and follow on and catch us up. He lagged far behind till lunch, and when we camped we had lunch, and then went back for him as he had not come up. He had fallen and had his hands frost-bitten, and we then returned for the sledge, and brought it, and fetched him in on it as he was rapidly losing the use of his legs. He was comatose when we got him into the tent, and he died without recovering consciousness that night about 10 P.M. We had a short rest for an hour or two in our bags that night, then had a meal and came on through the pressure ridges about 4 miles farther down and reached our Lower Glacier Depôt. Here we camped at last, had a good meal and slept a good night's rest which we badly needed. Our depôt was all right." [1] "A very terrible day. . . . On discussing the symptoms we think he began to get weaker just before we reached the Pole, and that his downward path was

[1] Wilson.

accelerated first by the shock of his frost-bitten fingers, and later by falls during rough travelling on the glacier, further by his loss of all confidence in himself. Wilson thinks it certain he must have injured his brain by a fall. It is a terrible thing to lose a companion in this way, but calm reflection shows that there could not have been a better ending to the terrible anxieties of the past week. Discussion of the situation at lunch yesterday shows us what a desperate pass we were in with a sick man on our hands at such a distance from home." [1]

[1] *Scott's Last Expedition*, vol. i. p. 573.

E. A. Wilson, del.

WHERE EVANS DIED

CHAPTER XVIII

THE POLAR JOURNEY (*continued*)

This happy breed of men, this little world,
This precious stone set in the silver sea,
Which serves it in the office of a wall, . . .
This blessed plot, this earth, this realm, this England,
This nurse, this teeming womb of royal kings, . . .
This land of such dear souls, this dear, dear land.

SHAKESPEARE.

VI. FARTHEST SOUTH

STEVENSON has written of a traveller whose wife slumbered by his side what time his spirit re-adventured forth in memory of days gone by. He was quite happy about it, and I suppose his travels had been peaceful, for days and nights such as these men spent coming down the Beardmore will give you nightmare after nightmare, and wake you shrieking—years after.

Of course they were shaken and weakened. But the conditions they had faced, and the time they had been out, do not in my opinion account entirely for their weakness nor for Evans' collapse, which may have had something to do with the fact that he was the biggest, heaviest and most muscular man in the party. I do not believe that this is a life for such men, who are expected to pull their weight and to support and drive a larger machine than their companions, and at the same time to eat no extra food. If, as seems likely, the ration these men were eating was not enough to support the work they were doing, then it is clear that the heaviest man will feel the deficiency sooner

and more severely than others who are smaller than he. Evans must have had a most terrible time: I think it is clear from the diaries that he had suffered very greatly without complaint. At home he would have been nursed in bed: here he must march (he was pulling the day he died) until he was crawling on his frost-bitten hands and knees in the snow—horrible: most horrible perhaps for those who found him so, and sat in the tent and watched him die. I am told that simple concussion does not kill as suddenly as this: probably some clot had moved in his brain.

For one reason and another they took very nearly as long to come down the glacier with a featherweight sledge as we had taken to go up it with full loads. Seven days' food were allowed from the Upper to the Lower Glacier Depôt. Bowers told me that he thought this was running it fine. But the two supporting parties got through all right, though they both tumbled into the horrible pressure above the Cloudmaker. The Last Return Party took $7\frac{1}{2}$ days: the Polar Party 10 days: the latter had been $25\frac{1}{2}$ days longer on the plateau than the former. Owing to their slow progress down the glacier the Polar Party went on short rations for the first and last time until they camped on March 19: with the exception of these days they had either their full, or more than their full ration until that date.

Until they reached the Barrier on their return journey the weather can be described neither as abnormal nor as unexpected. There were 300 statute miles (260 geo.) to be covered to One Ton Depôt, and 150 statute miles (130 geo.) more from One Ton to Hut Point. They had just picked up one week's food for five men: between the Beardmore and One Ton were three more depôts each with one week's food for five men. They were four men: their way was across the main body of the Barrier out of sight of land, and away from any immediate influence of the comparatively warm sea ahead of them. Nothing was known of the weather conditions in the middle of the Barrier at this time of year, and no one suspected that March conditions there were very cold. Shackleton turned home-

ward on January 10 : reached his Bluff Depôt on February 23, and Hut Point on February 28.

Wilson's diary continues :

"*February* 18. We had only five hours' sleep. We had butter and biscuit and tea when we woke at 2 P.M., then came over the Gap entrance to the pony-slaughter camp, visiting a rock moraine of Mt. Hope on the way."

"*February* 19. Late in getting away after making up new 10-foot sledge and digging out pony meat. We made $5\frac{1}{2}$ m. on a very heavy surface indeed." [1]

This bad surface is the feature of their first homeward marches on the Barrier. From now onwards they complain always of the terrible surfaces, but a certain amount of the heavy pulling must be ascribed to their own weakness. In the low temperatures which occurred later bad surfaces were to be expected : but now the temperatures were not really low, about zero to $-17°$: fine clear days for the most part and, a thing to be noticed, little wind. They wanted wind, which would probably be behind them from the south. "Oh ! for a little wind," Scott writes. "E. Evans evidently had plenty." He was already very anxious. "If this goes on we shall have a bad time, but I sincerely trust it is only the result of this windless area close to the coast and that, as we are making steadily outwards, we shall shortly escape it. It is perhaps premature [Feb. 19] to be anxious about covering distance. In all other respects things are improving. We have our sleeping-bags spread on the sledge and they are drying, but, above all, we have our full measure of food again. To-night we had a sort of stew fry of pemmican and horseflesh, and voted it the best hoosh we had ever had on a sledge journey. The absence of poor Evans is a help to the commissariat, but if he had been here in a fit state we might have got along faster. I wonder what is in store for us, with some little alarm at the lateness of the season." And on February 20, when they made 7 miles, "At present our sledge and ski leave deeply ploughed tracks which can be seen winding for miles behind. It is distressing, but as usual trials are forgotten

[1] Wilson.

when we camp, and good food is our lot. Pray God we get better travelling as we are not so fit as we were, and the season is advancing apace." And on February 21, "We never won a march of $8\frac{1}{2}$ miles with greater difficulty, but we can't go on like this." [1]

A breeze suddenly came away from S.S.E., force 4 to 6, at 11 A.M. on February 22, and they hoisted the sail on the sledge they had just picked up. They immediately lost the tracks they were following, and failed to find the cairns and camp remains which they should have picked up if they had been on the right course, which was difficult here owing to the thick weather we had on the outward march. Bowers was sure they were too near the land and they steered out, but still failed to pick up the line on which their depôts and their lives depended. Scott was convinced they were outside, not inside the line. The next morning Bowers took a round of angles, and they came to the conclusion, on slender evidence, that they were still too near the land. They had an unhappy march still off the tracks, "but just as we decided to lunch, Bowers' wonderful sharp eyes detected an old double lunch cairn, the theodolite telescope confirmed it, and our spirits rose accordingly." [2] Then Wilson had another "bad attack of snow-glare: could hardly keep a chink of eye open in goggles to see the course. Fat pony hoosh." [3] This day they reached the Lower Barrier Depôt.

They were in evil case, but they would have been all right, these men, if the cold had not come down upon them, a bolt quite literally from the blue of a clear sky: unexpected, unforetold and fatal. The cold itself was not so tremendous until you realize that they had been out four months, that they had fought their way up the biggest glacier in the world in feet of soft snow, that they had spent seven weeks under plateau conditions of rarefied air, big winds and low temperatures, and they had watched one of their companions die—not in a bed, in a hospital or ambulance, nor suddenly, but slowly, night by night and day by day, with his hands frost-bitten and his brain going,

[1] *Scott's Last Expedition*, vol. i. pp. 575-576. [2] *Ibid.* p. 577. [3] Wilson.

E. A. Wilson, del.

SLEDGING IN A HIGH WIND

until they must have wondered, each man in his heart, whether in such case a human being could be left to die, that four men might live. He died a natural death and they went out on to the Barrier.

Given such conditions as were expected, and the conditions for which preparation had been made, they would have come home alive and well. Some men say the weather was abnormal: there is some evidence that it was. The fact remains that the temperature dropped into the minus thirties by day and the minus forties by night. The fact also remains that there was a great lack of southerly winds, and in consequence the air near the surface was not being mixed: excessive radiation took place, and a layer of cold air formed near the ground. Crystals also formed on the surface of the snow and the wind was not enough to sweep them away. As the temperature dropped so the surface for the runners of the sledges became worse, as I explained elsewhere.[1] They were pulling as it were through sand.

In the face of the difficulties which beset them their marches were magnificent: 11½ miles on February 25 and again on the following day: 12.2 miles on February 27, and 11½ miles again on February 28 and 29. If they could have kept this up they would have come through without a doubt. But I think it was about now that they suspected, and then were sure, that they could not pull through. Scott's diary, written at lunch, March 2, is as follows:

"Misfortunes rarely come singly. We marched to the [Middle Barrier] depôt fairly easily yesterday afternoon, and since that have suffered three distinct blows which have placed us in a bad position. First, we found a shortage of oil; with most rigid economy it can scarce carry us to the next depôt on this surface [71 miles away]. Second, Titus Oates disclosed his feet, the toes showing very bad indeed, evidently bitten by the late temperatures. The third blow came in the night, when the wind, which we had hailed with some joy, brought dark overcast weather. It fell below −40° in the night, and this morning it took 1½ hours to get our foot-gear on, but we got away before

[1] See note at end of Chapter XIV.

eight. We lost cairn and tracks together and made as steady as we could N. by W., but have seen nothing. Worse was to come—the surface is simply awful. In spite of strong wind and full sail we have only done $5\frac{1}{2}$ miles. We are in a *very* queer street, since there is no doubt we cannot do the extra marches and feel the cold horribly." [1]

They did nearly ten miles that day, but on March 3 they had a terrible time. "God help us," wrote Scott, "we can't keep up this pulling, that is certain. Amongst ourselves we are unendingly cheerful, but what each man feels in his heart I can only guess. Putting on foot-gear in the morning is getting slower and slower, therefore every day more dangerous."

The following extracts are taken from Scott's diary.

"*March* 4. *Lunch.* We are in a very tight place indeed, but none of us despondent *yet*, or at least we preserve every semblance of good cheer, but one's heart sinks as the sledge stops dead at some sastrugi behind which the surface sand lies thickly heaped. For the moment the temperature is in the −20°—an improvement which makes us much more comfortable, but a colder snap is bound to come again soon. I fear that Oates at least will weather such an event very poorly. Providence to our aid! We can expect little from man now except the possibility of extra food at the next depôt. It will be real bad if we get there and find the same shortage of oil. Shall we get there? Such a short distance it would have appeared to us on the summit! I don't know what I should do if Wilson and Bowers weren't so determinedly cheerful over things."

"*Monday, March* 5. *Lunch.* Regret to say going from bad to worse. We got a slant of wind yesterday afternoon, and going on 5 hours we converted our wretched morning run of $3\frac{1}{2}$ miles into something over 9. We went to bed on a cup of cocoa and pemmican solid with the chill off. . . . The result is telling on all, but mainly on Oates, whose feet are in a wretched condition. One swelled up tremendously last night and he is very lame this morning. We started march on tea and pemmican as last night—we pre-

[1] *Scott's Last Expedition*, vol. i. pp. 582, 583.

E. A. Wilson, del.

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tend to prefer the pemmican this way. Marched for 5 hours this morning over a slightly better surface covered with high moundy sastrugi. Sledge capsized twice; we pulled on foot, covering about $5\frac{1}{2}$ miles. We are two pony marches and 4 miles about from our depôt. Our fuel dreadfully low and the poor Soldier nearly done. It is pathetic enough because we can do nothing for him; more hot food might do a little, but only a little, I fear. We none of us expected these terribly low temperatures, and of the rest of us, Wilson is feeling them most; mainly, I fear, from his self-sacrificing devotion in doctoring Oates' feet. We cannot help each other, each has enough to do to take care of himself. We get cold on the march when the trudging is heavy, and the wind pierces our worn garments. The others, all of them, are unendingly cheerful when in the tent. We mean to see the game through with a proper spirit, but it's tough work to be pulling harder than we ever pulled in our lives for long hours, and to feel that the progress is so slow. One can only say 'God help us!' and plod on our weary way, cold and very miserable, though outwardly cheerful. We talk of all sorts of subjects in the tent, not much of food now, since we decided to take the risk of running a full ration. We simply couldn't go hungry at this time."

"*Tuesday, March* 6. *Lunch.* We did a little better with help of wind yesterday afternoon, finishing $9\frac{1}{2}$ miles for the day, and 27 miles from depôt. But this morning things have been awful. It was warm in the night and for the first time during the journey I overslept myself by more than an hour; then we were slow with foot-gear; then, pulling with all our might (for our lives) we could scarcely advance at rate of a mile an hour; then it grew thick and three times we had to get out of harness to search for tracks. The result is something less than $3\frac{1}{2}$ miles for the forenoon. The sun is shining now and the wind gone. Poor Oates is unable to pull, sits on the sledge when we are track-searching—he is wonderfully plucky, as his feet must be giving him great pain. He makes no complaint, but his spirits only come up in spurts now, and he grows

more silent in the tent. We are making a spirit lamp to try and replace the primus when our oil is exhausted. . . ."

"*Wednesday, March* 7. A little worse, I fear. One of Oates' feet *very* bad this morning; he is wonderfully brave. We still talk of what we will do together at home.

"We only made $6\frac{1}{2}$ miles yesterday. This morning in $4\frac{1}{2}$ hours we did just over 4 miles. We are 16 from our depôt. If we only find the correct proportion of food there and this surface continues, we may get to the next depôt [Mt. Hooper, 72 miles farther] but not to One Ton Camp. We hope against hope that the dogs have been to Mt. Hooper; then we might pull through. If there is a shortage of oil again we can have little hope. One feels that for poor Oates the crisis is near, but none of us are improving, though we ar wonderfully fit considering the really excessive work we are doing. We are only kept going by good food. No wind this morning till a chill northerly air came ahead. Sun bright and cairns showing up well. I should like to keep the track to the end."

"*Thursday, March* 8. *Lunch.* Worse and worse in morning; poor Oates' left foot can never last out, and time over foot-gear something awful. Have to wait in night foot-gear for nearly an hour before I start changing, and then am generally first to be ready. Wilson's feet giving trouble now, but this mainly because he gives so much help to others. We did $4\frac{1}{2}$ miles this morning and are now $8\frac{1}{2}$ miles from the depôt—a ridiculously small distance to feel in difficulties, yet on this surface we know we cannot equal half our old marches, and that for that effort we expend nearly double the energy. The great question is: What shall we find at the depôt? If the dogs have visited it we may get along a good distance, but if there is another short allowance of fuel, God help us indeed. We are in a very bad way, I fear, in any case."

"*Saturday, March* 10. Things steadily downhill. Oates' foot worse. He has rare pluck and must know that he can never get through. He asked Wilson if he had a chance this morning, and of course Bill had to say he didn't know. In point of fact he has none. Apart from him, if he

went under now, I doubt whether we could get through. With great care we might have a dog's chance, but no more. The weather conditions are awful, and our gear gets steadily more icy and difficult to manage. . . .

"Yesterday we marched up the depôt, Mt. Hooper. Cold comfort. Shortage on our allowance all round. I don't know that any one is to blame. The dogs which would have been our salvation have evidently failed. Meares had a bad trip home I suppose.

"This morning it was calm when we breakfasted, but the wind came from the W.N.W. as we broke camp. It rapidly grew in strength. After travelling for half an hour I saw that none of us could go on facing such conditions. We were forced to camp and are spending the rest of the day in a comfortless blizzard camp, wind quite foul."

"*Sunday, March* 11. Titus Oates is very near the end, one feels. What we or he will do, God only knows. We discussed the matter after breakfast; he is a brave fine fellow and understands the situation, but he practically asked for advice. Nothing could be said but to urge him to march as long as he could. One satisfactory result to the discussion: I practically ordered Wilson to hand over the means of ending our troubles to us, so that any one of us may know how to do so. Wilson had no choice between doing so and our ransacking the medicine case. We have 30 opium tabloids apiece and he is left with a tube of morphine. So far the tragical side of our story.

"The sky completely overcast when we started this morning. We could see nothing, lost the tracks, and doubtless have been swaying a good deal since—3.1 miles for the forenoon—terribly heavy dragging—expected it. Know that 6 miles is about the limit of our endurance now, if we get no help from wind or surfaces. We have 7 days' food and should be about 55 miles from One Ton Camp to-night, $6 \times 7 = 42$, leaving us 13 miles short of our distance, even if things get no worse. Meanwhile the season rapidly advances."

"*Monday, March* 12. We did 6.9 miles yesterday, under our necessary average. Things are left much the

same, Oates not pulling much, and now with hands as well as feet pretty well useless. We did 4 miles this morning in 4 hours 20 min.—we may hope for 3 this afternoon, $7 \times 6 = 42$. We shall be 47 miles from the depôt. I doubt if we can possibly do it. The surface remains awful, the cold intense, and our physical condition running down. God help us ! Not a breath of favourable wind for more than a week, and apparently liable to head winds at any moment."

"*Wednesday, March* 14. No doubt about the going downhill, but everything going wrong for us. Yesterday we woke to a strong northerly wind with temp. $-37°$. Couldn't face it, so remained in camp till 2, then did $5\frac{1}{4}$ miles. Wanted to march later, but party feeling the cold badly as the breeze (N.) never took off entirely, and as the sun sank the temp. fell. Long time getting supper in dark.

"This morning started with southerly breeze, set sail and passed another cairn at good speed ; half-way, however, the wind shifted to W. by S. or W.S.W., blew through our wind-clothes and into our mitts. Poor Wilson horribly cold, could [not] get off ski for some time. Bowers and I practically made camp, and when we got into the tent at last we were all deadly cold. Then temp. now midday down $-43°$ and the wind strong. We *must* go on, but now the making of every camp must be more difficult and dangerous. It must be near the end, but a pretty merciful end. Poor Oates got it again in the foot. I shudder to think what it will be like to-morrow. It is only with greatest pains rest of us keep off frost-bites. No idea there could be temperatures like this at this time of year with such winds. Truly awful outside the tent. Must fight it out to the last biscuit, but can't reduce rations."

"*Friday, March* 16, *or Saturday*, 17. Lost track of dates, but think the last correct. Tragedy all along the line. At lunch, the day before yesterday, poor Titus Oates said he couldn't go on ; he proposed we should leave him in his sleeping-bag. That we could not do, and we induced him to come on, on the afternoon march. In spite of its awful nature for him he struggled on and we made a few

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A BLIZZARD CAMP

miles. At night he was worse and we knew the end had come.

"Should this be found I want these facts recorded. Oates' last thoughts were of his mother, but immediately before he took pride in thinking that his regiment would be pleased with the bold way in which he met his death. We can testify to his bravery. He has borne intense suffering for weeks without complaint, and to the very last was able and willing to discuss outside subjects. He did not—would not—give up hope till the very end. He was a brave soul. This was the end. He slept through the night before last, hoping not to wake; but he woke in the morning—yesterday. It was blowing a blizzard. He said, 'I am just going outside and may be some time.' He went out into the blizzard and we have not seen him since.

"I take this opportunity of saying that we have stuck to our sick companions to the last. In case of Edgar Evans, when absolutely out of food and he lay insensible, the safety of the remainder seemed to demand his abandonment, but Providence mercifully removed him at this critical moment. He died a natural death, and we did not leave him till two hours after his death. We knew that poor Oates was walking to his death, but though we tried to dissuade him, we knew it was the act of a brave man and an English gentleman. We all hope to meet the end with a similar spirit, and assuredly the end is not far.

"I can only write at lunch and then only occasionally. The cold is intense, – 40° at mid-day. My companions are unendingly cheerful, but we are all on the verge of serious frost-bites, and though we constantly talk of fetching through I don't think any one of us believes it in his heart.

"We are cold on the march now, and at all times except meals. Yesterday we had to lay up for a blizzard and to-day we move dreadfully slowly. We are at No. 14 Pony Camp, only two pony marches from One Ton Depôt. We leave here our theodolite, a camera, and Oates' sleeping-bags. Diaries, etc., and geological specimens carried at Wilson's special request, will be found with us or on our sledge."

"*Sunday, March* 18. To-day, lunch, we are 21 miles from the depôt. Ill fortune presses, but better may come. We have had more wind and drift from ahead yesterday; had to stop marching; wind N.W., force 4, temp. -35°. No human being could face it, and we are worn out *nearly*.

"My right foot has gone, nearly all the toes—two days ago I was proud possessor of best feet. . . . Bowers takes first place in condition, but there is not much to choose after all. The others are still confident of getting through—or pretend to be—I don't know! We have the last *half* fill of oil in our primus and a very small quantity of spirit—this alone between us and thirst. The wind is fair for the moment, and that is perhaps a fact to help. The mileage would have seemed ridiculously small on our outward journey."

"*Monday, March* 19. *Lunch.* We camped with difficulty last night and were dreadfully cold till after our supper of cold pemmican and biscuit and a half pannikin of cocoa cooked over the spirit. Then, contrary to expectation, we got warm and all slept well. To-day we started in the usual dragging manner. Sledge dreadfully heavy. We are 15½ miles from the depôt and ought to get there in three days. What progress! We have two days' food but barely a day's fuel. All our feet are getting bad—Wilson's best, my right foot worse, left all right. There is no chance to nurse one's feet till we can get hot food into us. Amputation is the least I can hope for now, but will the trouble spread? That is the serious question. The weather doesn't give us a chance—the wind from N. to N.W. and -40° temp. to-day."

"*Wednesday, March* 21. Got within 11 miles of depôt Monday night; had to lay up all yesterday in severe blizzard. To-day forlorn hope, Wilson and Bowers going to depôt for fuel."

"22 *and* 23. Blizzard bad as ever—Wilson and Bowers unable to start—to-morrow last chance—no fuel and only one or two of food left—must be near the end. Have decided it shall be natural—we shall march for the depôt with or without our effects and die in our tracks."

"*Thursday, March* 29. Since the 21st we have had a continuous gale from W.S.W. and S.W. We had fuel to make two cups of tea apiece and bare food for two days on the 20th. Every day we have been ready to start for our depôt *11 miles* away, but outside the door of the tent it remains a scene of whirling drift. I do not think we can hope for any better things now. We shall stick it out to the end, but we are getting weaker, of course, and the end cannot be far.

"It seems a pity, but I do not think I can write more.

R. Scott."

Last entry. "For God's sake, look after our people."

The following extracts are from letters written by Scott:

To Mrs. E. A. Wilson

My dear Mrs. Wilson. If this letter reaches you, Bill and I will have gone out together. We are very near it now and I should like you to know how splendid he was at the end—everlastingly cheerful and ready to sacrifice himself for others, never a word of blame to me for leading him into this mess. He is not suffering, luckily, at least only minor discomforts.

His eyes have a comfortable blue look of hope and his mind is peaceful with the satisfaction of his faith in regarding himself as part of the great scheme of the Almighty. I can do no more to comfort you than to tell you that he died as he lived, a brave, true man—the best of comrades and staunchest of friends.

My whole heart goes out to you in pity. Yours,

R. Scott.

To Mrs. Bowers

My dear Mrs. Bowers. I am afraid this will reach you after one of the heaviest blows of your life.

I write when we are very near the end of our journey, and I am finishing it in company with two gallant, noble gentlemen. One of these is your son. He had come to be one of my closest and soundest friends, and I appreciate his wonderful upright nature, his ability and energy. As

the troubles have thickened his dauntless spirit ever shone brighter and he has remained cheerful, hopeful and indomitable to the end. . . .

To Sir J. M. Barrie

My dear Barrie. We are pegging out in a very comfortless spot. Hoping this letter may be found and sent to you, I write a word of farewell . . . Good-bye. I am not at all afraid of the end, but sad to miss many a humble pleasure which I had planned for the future on our long marches. I may not have proved a great explorer, but we have done the greatest march ever made and come very near to great success. Good-bye, my dear friend. Yours ever,

R. Scott.

We are in a desperate state, feet frozen, etc. No fuel and a long way from food, but it would do your heart good to be in our tent, to hear our songs and the cheery conversation as to what we will do when we get to Hut Point.

Later. We are very near the end, but have not and will not lose our good cheer. We have four days of storm in our tent and nowhere's food or fuel. We did intend to finish ourselves when things proved like this, but we have decided to die naturally in the track.[1]

The following extracts are from letters written to other friends :

" . . . I want to tell you that I was *not* too old for this job. It was the younger men that went under first. . . . After all we are setting a good example to our countrymen, if not by getting into a tight place, by facing it like men when we were there. We could have come through had we neglected the sick."

" Wilson, the best fellow that ever stepped, has sacrificed himself again and again to the sick men of the party. . . ."

" . . . Our journey has been the biggest on record, and nothing but the most exceptional hard luck at the end would have caused us to fail to return."

[1] *Scott's Last Expedition*, vol. i. pp. 584-599.

"What lots and lots I could tell you of this journey. How much better has it been than lounging in too great comfort at home."

Message to the Public

The causes of the disaster are not due to faulty organization, but to misfortune in all risks which had to be undertaken.

1. The loss of pony transport in March 1911 obliged me to start later than I had intended, and obliged the limits of stuff transported to be narrowed.

2. The weather throughout the outward journey, and especially the long gale in 83° S., stopped us.

3. The soft snow in lower reaches of glacier again reduced pace.

We fought these untoward events with a will and conquered, but it cut into our provision reserve.

Every detail of our food supplies, clothing and depôts made on the interior ice-sheet and over that long stretch of 700 miles to the Pole and back, worked out to perfection. The advance party would have returned to the glacier in fine form and with surplus of food, but for the astonishing failure of the man whom we had least expected to fail. Edgar Evans was thought the strongest man of the party.

The Beardmore Glacier is not difficult in fine weather, but on our return we did not get a single completely fine day; this with a sick companion enormously increased our anxieties.

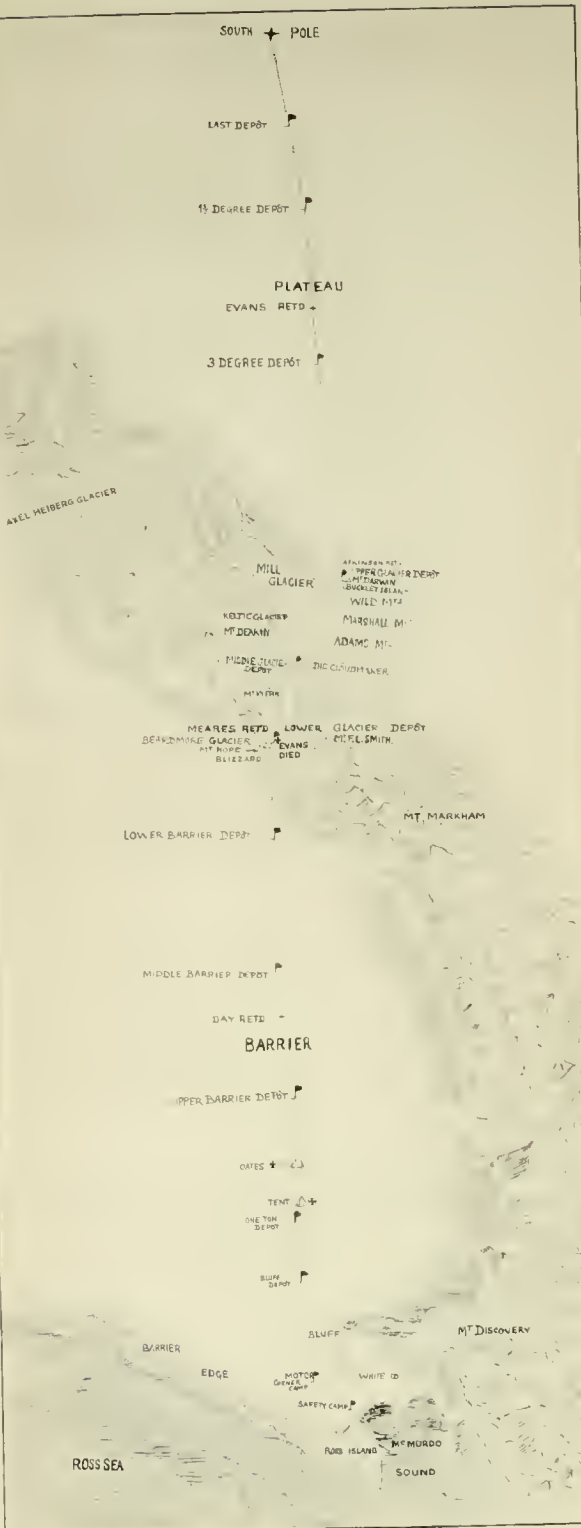
As I have said elsewhere, we got into frightfully rough ice and Edgar Evans received a concussion of the brain—he died a natural death, but left us a shaken party with the season unduly advanced.

But all the facts above enumerated were as nothing to the surprise which awaited us on the Barrier. I maintain that our arrangements for returning were quite adequate, and that no one in the world would have expected the temperatures and surfaces which we encountered at this time of the year. On the summit in lat. 85°-86° we had −20°, −30°. On the Barrier in lat. 82°, 10,000 feet lower, we

had – 30° in the day, – 47° at night pretty regularly, with continuous head-wind during our day marches. It is clear that these circumstances come on very suddenly, and our wreck is certainly due to this sudden advent of severe weather, which does not seem to have any satisfactory cause. I do not think human beings ever came through such a month as we have come through, and we should have got through in spite of the weather but for the sickening of a second companion, Captain Oates, and a shortage of fuel in our depôts for which I cannot account, and finally, but for the storm which has fallen on us within 11 miles of the depôt at which we hoped to secure our final supplies. Surely misfortune could scarcely have exceeded this last blow. We arrived within 11 miles of our old One Ton Camp with fuel for one last meal and food for two days. For four days we have been unable to leave the tent—the gale howling about us. We are weak, writing is difficult, but for my own sake I do not regret this journey, which has shown that Englishmen can endure hardships, help one another, and meet death with as great a fortitude as ever in the past. We took risks, we knew we took them; things have come out against us, and therefore we have no cause for complaint, but bow to the will of Providence, determined still to do our best to the last. But if we have been willing to give our lives to this enterprise, which is for the honour of our country, I appeal to our countrymen to see that those who depend on us are properly cared for.

Had we lived, I should have had a tale to tell of the hardihood, endurance, and courage of my companions which would have stirred the heart of every Englishman. These rough notes and our dead bodies must tell the tale, but surely, surely a great rich country like ours will see that those who are dependent on us are properly provided for.—R. Scott.[1]

[1] *Scott's Last Expedition*, vol. i. pp. 605-607.



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THE POLAR JOURNEY

CHAPTER XIX

NEVER AGAIN

And now in age I bud again,
After so many deaths I live and write;
I once more smell the dew and rain,
And relish versing. O my onely light,
It cannot be
That I am he
On whom thy tempests fell all night.

HERBERT.

I SHALL inevitably be asked for a word of mature judgment of the expedition of a kind that was impossible when we were all close up to it, and when I was a subaltern of 24, not incapable of judging my elders, but too young to have found out whether my judgment was worth anything. I now see very plainly that though we achieved a first-rate tragedy, which will never be forgotten just because it was a tragedy, tragedy was not our business. In the broad perspective opened up by ten years' distance, I see not one journey to the Pole, but two, in startling contrast one to another. On the one hand, Amundsen going straight there, getting there first, and returning without the loss of a single man, and without having put any greater strain on himself and his men than was all in the day's work of polar exploration. Nothing more business-like could be imagined. On the other hand, our expedition, running appalling risks, performing prodigies of superhuman endurance, achieving immortal renown, commemorated in august cathedral sermons and by public statues, yet reaching the Pole only to find our terrible journey superfluous, and leaving our best men dead on the ice. To ignore such

a contrast would be ridiculous: to write a book without accounting for it a waste of time.

First let me do full justice to Amundsen. I have not attempted to disguise how we felt towards him when, after leading us to believe that he had equipped the Fram for an Arctic journey, and sailed for the north, he suddenly made his dash for the south. Nothing makes a more unpleasant impression than a feint. But when Scott reached the Pole only to find that Amundsen had been there a month before him, his distress was not that of a schoolboy who has lost a race. I have described what it had cost Scott and his four companions to get to the Pole, and what they had still to suffer in returning until death stopped them. Much of that risk and racking toil had been undertaken that men might learn what the world is like at the spot where the sun does not decline in the heavens, where a man loses his orbit and turns like a joint on a spit, and where his face, however he turns, is always to the North. The moment Scott saw the Norwegian tent he knew that he had nothing to tell that was not already known. His achievement was a mere precaution against Amundsen perishing on his way back; and that risk was no greater than his own. The Polar Journey was literally laid waste: that was the shock that staggered them. Well might Bowers be glad to see the last of Norskies' tracks as their homeward paths diverged.

All this heartsickness has passed away now; and the future explorer will not concern himself with it. He will ask, what was the secret of Amundsen's slick success? What is the moral of our troubles and losses? I will take Amundsen's success first. Undoubtedly the very remarkable qualities of the man himself had a good deal to do with it. There is a sort of sagacity that constitutes the specific genius of the explorer; and Amundsen proved his possession of this by his guess that there was terra firma in the Bay of Whales as solid as on Ross Island. Then there is the quality of big leadership which is shown by daring to take a big chance. Amundsen took a very big one indeed when he turned from the route to the Pole explored and ascertained by Scott and Shackleton and determined to

find a second pass over the mountains from the Barrier to the plateau. As it happened, he succeeded, and established his route as the best way to the Pole until a better is discovered. But he might easily have failed and perished in the attempt; and the combination of reasoning and daring that nerved him to make it can hardly be overrated. All these things helped him. Yet any rather conservative whaling captain might have refused to make Scott's experiment with motor transport, ponies and man-hauling, and stuck to the dogs ; and to the use of ski in running those dogs ; and it was this quite commonplace choice that sent Amundsen so gaily to the Pole and back: with no abnormal strain on men or dogs, and no great hardship either. He never pulled a mile from start to finish.

The very ease of the exploit makes it impossible to infer from it that Amundsen's expedition was more highly endowed in personal qualities than ours. We did not suffer from too little brains or daring: we may have suffered from too much. We were primarily a great scientific expedition, with the Pole as our bait for public support, though it was not more important than any other acre of the plateau. We followed in the steps of a polar expedition which brought back more results than any of its forerunners : Scott's Discovery voyage. We had the largest and most efficient scientific staff that ever left England. We were discursive. We were full of intellectual interests and curiosities of all kinds. We took on the work of two or three expeditions.

It is obvious that there are disadvantages in such a division of energy. Scott wanted to reach the Pole : a dangerous and laborious exploit, but a practicable one. Wilson wanted to obtain the egg of the Emperor penguin: a horribly dangerous and inhumanly exhausting feat which is none the less impracticable because the three men who achieved it survived by a miracle. These two feats had to be piled one on top of the other. What with the Depôt Journey and others, in addition to these two, we were sledged out by the end of our second sledging season, and our worst year was still to come. We, the survivors, went

in search of the dead when there was a possibly living party waiting in the ice somewhere for us to succour them. That turned out all right, because when we got back, we found Campbell's party self-extricated and waiting for us, alive and well. But suppose they also had perished, what would have been said of us ?

The practical man of the world has plenty of criticism of the way things were done. He says dogs should have been taken; but he does not show how they could have been got up and down the Beardmore. He is scandalized because 30 lbs. of geological specimens were deliberately added to the weight of the sledge that was dragging the life out of the men who had to haul it ; but he does not realize that it is the friction surfaces of the snow on the runners which mattered and not the dead weight, which in this case was almost negligible. Nor does he know that these same specimens dated a continent and may elucidate the whole history of plant life. He will admit that we were all very wonderful, very heroic, very beautiful and devoted: that our exploits gave a glamour to our expedition that Amundsen's cannot claim ; but he has no patience with us, and declares that Amundsen was perfectly right in refusing to allow science to use up the forces of his men, or to interfere for a moment with his single business of getting to the Pole and back again. No doubt he was ; but we were not out for a single business : we were out for everything we could add to the world's store of knowledge about the Antarctic.

Of course the whole business simply bristles with " ifs ": If Scott had taken dogs and succeeded in getting them up the Beardmore : if we had not lost those ponies on the Depôt Journey: if the dogs had not been taken so far and the One Ton Depôt had been laid: if a pony and some extra oil had been depôted on the Barrier: if a four-man party had been taken to the Pole: if I had disobeyed my instructions and gone on from One Ton, killing dogs as necessary: or even if I had just gone on a few miles and left some food and fuel under a flag upon a cairn: if they had been first at the Pole: if it had been any other season but that. . . . But always the bare fact remains

that Scott could not have travelled from McMurdo Sound to the Pole faster than he did except with dogs; all the king's horses and all the king's men could not have done it. Why, then, says the practical man, did we go to McMurdo Sound instead of to the Bay of Whales? Because we gained that continuity of scientific observation which is so important in this work: and because the Sound was the starting-point for continuing the exploration of the only ascertained route to the Pole, via the Beardmore Glacier.

I am afraid it was all inevitable: we were as wise as any one can be before the event. I admit that we, scrupulously economical of our pemmican, were terribly prodigal of our man-power. But we had to be: the draft, whatever it may have been on the whole, was not excessive at any given point; and anyhow we just had to use every man to take every opportunity. There is so much to do, and the opportunities for doing it are so rare. Generally speaking, I don't see how we could have done differently, but I don't want to see it done again; I don't want it to be necessary to do it again. I want to see this country tackle the job, and send enough men to do one thing at a time. They do it in Canada: why not in England too?

But we wasted our man-power in one way which could have been avoided. I have described how every emergency was met by calling for volunteers, and how the volunteers were always forthcoming. Unfortunately volunteering was relied on not only for emergencies, but for a good deal of everyday work that should have been organised as routine; and the inevitable result was that the willing horses were overworked. It was a point of honour not to ca' canny. Men were allowed to do too much, and were told afterwards that they had done too much; and that is not discipline. They should not have been allowed to do too much. Until our last year we never insisted on a regular routine.

Money was scarce: probably Scott could not have obtained the funds for the expedition if its objective had not been the Pole. There was no lack of the things which

could be bought across the counter from big business houses—all landing, sledging, and scientific equipment was first-class—but one of the first and most important items, the ship, would have sent Columbus on strike, and nearly sent us to the bottom of the sea.

People talk of the niggardly equipment of Columbus when he sailed west from the Canaries to try a short-cut to an inhabited continent of magnificent empires, as he thought; but his three ships were, relatively to the resources of that time, much better than the one old tramp in which we sailed for a desert of ice in which the evening and morning are the year and not the day, and in which not even polar bears and reindeers can live. Amundsen had the Fram, built for polar exploration *ad hoc*. Scott had the Discovery. But when one thinks of these Nimrods and Terra Novas, picked up second-hand in the wooden-ship market, and faked up for the transport of ponies, dogs, motors, and all the impedimenta of a polar expedition, to say nothing of the men who have to try and do scientific work inside them, one feels disposed to clamour for a Polar Factory Act making it a crime to ship men for the ice in vessels more fit to ply between London Bridge and Ramsgate.

And then the begging that is necessary to obtain even this equipment. Shackleton hanging round the doors of rich men ! Scott writing begging letters for months together ! Is the country not ashamed ?

Modern civilized States should make up their minds to the endowment of research, which includes exploration; and as all States benefit alike by the scientific side of it there is plenty of scope for international arrangement, especially in a region where the mere grabbing of territory is meaningless, and no Foreign Office can trace the frontier between King Edward's Plateau and King Haakon's. The Antarctic continent is still mostly unexplored; but enough is known of it to put any settlement by ordinary pioneer emigration, pilgrim fathers and the like, out of the question. Ross Island is not a place for a settlement: it is a place for an elaborately equipped scientific station, with a

staff in residence for a year at a time. Our stay of three years was far too much: another year would have driven the best of us mad. Of the five main journeys which fell to my lot, one, the Winter Journey, should not have been undertaken at all with our equipment; and two others, the Dog Journey and the Search Journey, had better have been done by fresh men. It is no use repeating that Englishmen will respond to every call and stick it to the death: they will (some of them); but they have to pay the price all the same; and the price in my case was an overdraft on my vital capital which I shall never quite pay off, and in the case of five bigger, stronger, more seasoned men, death. The establishment of such stations and of such a service cannot be done by individual heroes and enthusiasts cadging for cheques from rich men and grants from private scientific societies: it is a business, like the Nares Arctic expedition, for public organization.

I do not suppose that in these days of aviation the next visit to the Pole will be made by men on foot dragging sledges, or by men on sledges dragged by dogs, mules or ponies; nor will depôts be laid in that way. The pack will not, I hope, be broken through by any old coal-burning ship that can be picked up in the second-hand market. Specially built ships, and enough of them; specially engined tractors and aeroplanes; specially trained men and plenty of them, will all be needed if the work is to be done in any sort of humane and civilized fashion; and Cabinet ministers and voters alike must learn to value knowledge that is not baited by suffering and death. My own bolt is shot; I do not suppose I shall ever go south again before I go west; but if I do it will be under proper and reasonable conditions. I may not come back a hero; but I shall come back none the worse; for I repeat, the Antarctic, in moderation as to length of stay, and with such accommodation as is now easily within the means of modern civilized Powers, is not half as bad a place for public service as the worst military stations on the equator. I hope that by the time Scott comes home—for he is coming home: the Barrier is moving, and not a trace of our funeral cairn was

found by Shackleton's men in 1916—the hardships that wasted his life will be only a horror of the past, and his *via dolorosa* a highway as practicable as Piccadilly.

And now let me come down to tin tacks. No matter how well the thing is done in future, its organizers will want to know at first all we can tell them about oil, about cold, and about food. First, as to oil.

Scott complains of a shortage of oil at several of his last depôts. There is no doubt that this shortage was due to the perishing of the leather washers of the tins which contained the paraffin oil. All these tins had been subjected to the warmth of the sun in summer and the autumn temperatures, which were unexpectedly cold. In his Voyage of the Discovery Scott wrote as follows of the tins in which they drew their oil when sledging: "Each tin had a small cork bung, which was a decided weakness; paraffin *creeps* in the most annoying manner, and a good deal of oil was wasted in this way, especially when the sledges were travelling over rough ground and were shaken or, as frequently happened, capsized. It was impossible to make these bungs quite tight, however closely they were jammed down, so that in spite of a trifling extra weight a much better fitting would have been a metallic screwed bung. To find on opening a fresh tin of oil that it was only three-parts full was very distressing, and of course meant that the cooker had to be used with still greater care."[1] Amundsen wrote of his paraffin: "We kept it in the usual cans but they proved too weak; not that we lost any paraffin, but Bjaaland had to be constantly soldering to keep them tight."[2]

Our own tins were furnished with the metallic screwed stoppers which Scott recommended. There was no trouble reported[3] until we came up to One Ton Camp when on the Search Journey. Here was the depôt of food and oil which I had laid in the previous autumn for the Polar Party, stowed in a canvas 'tank' which was buried be-

[1] Scott, *Voyage of the Discovery*, vol. i. p. 449.

[2] Amundsen, *The South Pole*, vol. ii. p. 19.

[3] Lashly's diary records that the Second Return Party found a shortage of oil at the Middle Barrier Depôt (see p. 395).

neath seven feet of snow; the oil was placed on the top of the snow, in order that the red tins might prove an additional mark for the depôt. When we dug out the tank the food inside was almost uneatable owing to the quantity of paraffin which had found its way down through seven feet of snow during the winter and spring.

We then found the Polar Party and learned of the shortage of oil. After our return to Cape Evans some one was digging about the camp and came across a wooden case containing eight one-gallon tins of paraffin. These had been placed there in September 1911, to be landed at Cape Crozier by the Terra Nova when she came down. The ship could not take them: they were snowed up during the winter, lost and forgotten, until dug up fifteen months afterwards. Three tins were full, three empty, one a third full and one two-thirds full.

There can be no doubt that the oil, which was specially volatile, tended to vaporize and escape through the stoppers, and that this process was accelerated by the perishing, and I suggest also the hardening and shrinking, of the leather washers. Another expedition will have to be very careful on this point: they might reduce the risk by burying the oil.

The second point about which something must be said is the unexpected cold met by Scott on the Barrier, which was the immediate cause of the disaster. "No one in the world would have expected the temperatures and surfaces which we encountered at this time of the year. . . . It is clear that these circumstances come on very suddenly, and our wreck is certainly due to this sudden advent of severe weather, which does not seem to have any satisfactory cause."[1]

They came down the glacier in plus temperatures: nor was there anything abnormal for more than a week after they got on to the Barrier. Then there came a big drop to a $-37°$ minimum on the night of February 26. It is significant that the sun began to dip below the southern horizon at midnight about this time. "There is no doubt the middle of the Barrier is a pretty awful locality," wrote Scott.

[1] Scott, "Message to the Public."

Simpson, in his meteorological report, has little doubt that the temperatures met by the Polar Party were abnormal. The records " clearly bring to light the possibility of great cold at an extremely early period in the year within a comparatively few miles of an open sea where the temperatures were over 40 degrees higher." " It is quite impossible to believe that normally there is a difference of nearly 40 degrees in March between McMurdo Sound and the South of the Barrier." The temperatures recorded by other sledge parties in March 1912 and those recorded at Cape Evans form additional evidence, in Simpson's opinion, that the temperatures experienced by Scott were not such as might be expected during normal autumn weather.

Simpson's explanation is based upon the observations made in McMurdo Sound by sending up balloons with self-recording instruments attached. These showed that very rapid radiation takes place from the snow surface in winter, which cools the air in the immediate neighbourhood: a cold layer of air is thus formed near the ground, which may be many degrees colder than the air above it. It becomes, as it were, colder than it ought to be. This, however, can only happen during an absence of wind: when a wind blows the cold layer is swept away, the air is mixed and the temperature rises.

The absence of wind from the south noted by Scott was, in Simpson's opinion, the cause of the low temperatures met by Scott: the temperature was reduced ten degrees below normal at Cape Evans, and perhaps twenty degrees where Scott was.[1]

The third question is that of food. It is this point which is most important to future explorers. It is a fact that the Polar Party failed to make their distance because they became weak, and that they became weak although they were eating their full ration or more than their full ration of food, save for a few days when they went short on the way down the Beardmore Glacier. The first man to weaken

[1] A full discussion of these and other Antarctic temperatures is to be found in the scientific reports of the British Antarctic Expedition, 1910–13, "Meteorology," vol. i. chap. ii., by G. C. Simpson.

was the biggest and heaviest man in the expedition: "the man whom we had least expected to fail."

The rations were of two kinds. The Barrier (B) ration was that which was used on the Barrier during the outward journey towards the Pole. The Summit (S) ration was the result of our experiments on the Winter Journey. I expect it is the best ration which has been used to date, and consisted of biscuits 16, pemmican 12, butter 2, cocoa 0.57, sugar 3 and tea 0.86 ounces; total 34.43 ounces daily per man.

The twelve men who went forward started this S ration at the foot of the Beardmore, and it was this ration which was left in all depôts to see them home. It was much more satisfying than the Barrier ration, and men could not have eaten so much when leading ponies or driving dogs in the early stages of summer Barrier sledging: but man-hauling is a different business altogether from leading ponies or driving dogs.

It is calculated that the body requires certain proportions of fat, carbohydrates and proteins to do certain work under certain conditions: but just what the absolute quantities are is not ascertained. The work of the Polar Party was laborious: the temperatures (the most important of the conditions) varied from comparative warmth up and down the glacier to an average of about $-20°$ in the rarefied air of the plateau. The temperatures met by them on their return over the Barrier were not really low for more than a week, and then there came quite commonly minus thirties during the day with a further drop to minus forties at night, when for a time the sun was below the horizon. These temperatures, which are not very terrible to men who are fresh and whose clothing is new, were ghastly to these men who had striven night and day almost ceaselessly for four months on, as I maintain, insufficient food. Did these temperatures kill them?

Undoubtedly the low temperatures caused their death, inasmuch as they would have lived had the temperatures remained high. But Evans would not have lived: he died before the low temperatures occurred. What killed Evans? And why did the other men weaken as they did, though

they were eating full rations and more? Weaken so much that in the end they starved to death?

I have always had a doubt whether the weather conditions were sufficient to cause the tragedy. These men on full rations were supposed to be eating food of sufficient value to enable them to do the work they were doing, under the conditions which they actually met until the end of February, without loss of strength. They had more than their full rations, but the conditions in March were much worse than they imagined to be possible: when three survivors out of the five pitched their Last Camp they were in a terrible state. After the war I found that Atkinson had come to wonder much as I, but he had gone farther, for he had the values of our rations worked out by a chemical expert according to the latest knowledge and standards. I may add that, being in command after Scott's death, he increased the ration for the next year's sledging, so I suppose he had already come to the conclusion that the previous ration was not sufficient. The following are some of the data for which I am indebted to him: the whole subject will be investigated by him and the results published in a more detailed form.

According to the most modern standards the food requirements for laborious work at a temperature of zero Fahr. (which is a fair Barrier average temperature to take) are 7714 calories to produce 10,069 foot-tons of work. The actual Barrier ration which we used would generate 4003 calories, equivalent to 5331 foot-tons of work. Similar requirements for laborious work at $-10°$ Fahr. (which is a high average plateau temperature) are 8500 calories to produce 11,094 foot-tons of work. The actual Summit ration would generate 4889 calories, equivalent to 6608 foot-tons of work. These requirements are calculated for total absorption of all food-stuffs: but in practice, by visual proof, this does not take place: this is especially noticeable in the case of fats, a quantity of which were digested neither by men, ponies, nor dogs.

Several things go to prove that our ration was not enough. In the first case we were probably not as fit as we seemed after long sledge journeys. There is no doubt that

when sledging men developed an automaticity of certain muscles at the expense of other muscles: for instance, a sledge could be hauled all day at the expense of the arms, and we had little power to lift weights at the end of several months of sledging. In relation to this I would add that, when the relief ship arrived in February 1912, four of us were at Cape Evans, but just arrived from three months of the Polar Journey. The land party, we four among them, were turned on to sledge stores ashore. This in practice meant twenty miles every day dragging a sledge; a good deal of 'humping' heavy cases, from five o'clock in the morning to very late at night; with uncertain meals and no rests. I can remember now how hard that work was to myself and, I expect, to those others who had been away sledging. The ship's party sledged only every other day "because they were not used to it." This was extremely bad organization, and in view of the possibility that some of the men might be required for further sledging in the autumn, just silly.

Again, there is the experience of the man-hauling parties of the Polar Journey. There was, you may remember, a man-hauling party on the way to the Beardmore Glacier. They travelled with a light sledge but they lost weight on the Barrier ration. It is significant that they picked up condition when they started the Summit ration, especially Lashly.

The Polar Party and the two returning parties, who were on the Summit ration from the foot of the Beardmore until the end of their journeys, weakened, in Atkinson's opinion, more than they should have done had their ration been sufficient. The First Return Party covered approximately 1100 statute miles. At the end of their journey their pulling muscles were all right, but Atkinson, who led the party, considers that they were at least 70 per cent weaker in other muscles. They all lost a great deal of weight, though they had the best conditions of the three returning parties, and the temperatures met by them averaged well over zero.

The Second Return Party faced much worse conditions. They were only three men, and one of the three was so sick that for 120 miles he could not pull and for 90 miles he

had to be dragged on the sledge. The average temperature approximated zero. They were extremely exhausted.

Scott makes constant reference to the increasing hunger of the Polar Party: it is clear that the food did not compensate for the conditions which were met in increasing severity. Yet they were eating rather more than their full ration a considerable part of the time. It has to be considered that the temperatures met by them averaged far below $-10°$: that they did not absorb all their food: that increased heat was wanted not only for energy to do extra work caused by bad surfaces and contrary winds, but also to heat their bodies, and to thaw out their clothing and sleeping-bags.

I believe it to be clear that the rations used by us must not only be increased by future expeditions, but co-ordinated in different proportions of fats, proteins and carbohydrates. Taking into consideration the fact that our bodies were not digesting the amount of fats we had provided, Atkinson suggests that it is useless to increase the fats at the expense of the protein and carbohydrates. He recommends that fats should total about 5 ounces daily. The digestion of carbohydrates is easy and complete, and though that of protein is more complicated there are plenty of the necessary digestive ferments. The ration should be increased by equal amounts of protein and carbohydrates; both should be provided in as dry and pure a form as possible.

There is no censure attached to this criticism. Our ration was probably the best which has been used: but more is known now than was known then. We are all out to try and get these things right for the future.[1]

Campbell reached Hut Point only five days after we left it with the dog-teams. A characteristic note left to greet us on our return regretted they were too late to take part in the Search Journey. If I had lived through ten months such as those men had just endured, wild horses would not have dragged me out sledging again. But they were keen

[1] Modern research suggests that the presence or absence of certain vitamines makes a difference, and it may be a very great difference, in the ability of any individual to profit by the food supplied to him. If this be so, this factor must have had great influence upon the fate of the Polar Party, whose diet was seriously deficient in, if not absolutely free from, vitamines. The importance of this deficiency to the future explorer can hardly be exaggerated, and I suggest that no future Antarctic sledge party can ever set out to

to get some useful work done in the time which remained until the ship arrived.

We had the Polar records: Campbell and his men, unaided, had not only survived their terrible winter, but had sledged down the coast after it. We ourselves, faced by a difficult alternative, had fallen on our feet. We never hoped for more than this: we seldom hoped for so much.

I wanted a series of Adélie penguin embryos from the rookery at Cape Royds, but had not expected an opportunity of getting them because I was away sledging during the summer months. Now the chance had come. Atkinson wanted to work on parasites at the same place, and others to survey. But the real job was an ascent of Erebus, the active volcano which rose from our doors to some 13,400 feet in height. A party of Shackleton's men under Professor David went up it in March, and managed to haul a sledge up to 5800 feet, from which point they had to portage their gear. A year before this Debenham, with the help of a telescope, selected a route by which they could haul a sledge up to 9000 feet. There proved to be no great difficulty about it; it was just a matter of legs and breath.

They were a cheery company, part-singing in the evenings and working hard all day. It was an uneventful trip, Debenham said, and very harmonious: the best trip he had down there. Both Debenham and Dickason suffered from mountain sickness, however, and they were the two smokers! The clearness of the air was marked. At 5000 feet they could plainly see Mount Melbourne and Cape Jones, between two and three hundred miles away, and several uncharted mountains over to the west, but they were unable to plot them accurately because they could get direction rays from one point only. The Sound itself was covered by cloud most of the time, but Beaufort Island and Franklin Island were clear. Unlike David's party, they could see no signs whatever of volcanic action on Mount

travel inland again without food which contains these vitamines. It is to be noticed that, although the Medical Research Council's authoritative publication on the true value of these accessory substances was not available when we went South in 1910, yet Atkinson insisted that fresh onions, which had been brought down by the ship, be added to our ration for the Search Journey. Compare recent work of Professor Leonard Hill on the value of ultra-violet rays in compensating for lack of vitamines.—A. C.-G.

Bird, which is almost entirely covered with ice on which it was to be expected that some mark might be left. At 9000 feet Terror looked very imposing, but Mount Bird and Terra Nova were insignificant and uninteresting. The valley between the old crater and the slopes of the second crater greatly impressed them, and they found a fine little crevassed glacier in it. Both Priestley and Debenham are of opinion that it is possible to get to Terror by this valley, and that there are no crevassed areas or impossible slopes on the way. All the same it would probably be more sensible to go from Cape Crozier.

At a point about 9000 feet up, Priestley, Gran, Abbott and Hooper started to make the ascent to the active crater on December 10. They packed the tent, poles, bags, inner cooker and cooking gear, with four days' provisions, and reached the second crater at about 11,500 feet, to be hung up by cloud all the next day. At these altitudes the temperature varied between $-10°$ and $-30°$, though at sea-level simultaneously they were round about freezing-point. By 1 A.M. on the 12th the conditions were good—clear, with a southerly wind blowing the steam away from the summit. The party got away as soon as possible and reached the lip of the active crater in a few hours. Looking down they were unable to see the bottom, for it was full of steam: the sides sloped at a steep angle for some 500 feet, when they became sheer precipices: the opening appeared to be about 14,000 paces round. The top is mostly pumice, but there is also a lot of kenyte, much the same as at sea-level: the old crater was mostly kenyte, proving that this is the oldest rock of the island: felspar crystals must be continually thrown out, for they were lying about on the top of the snow; I have one nearly $3\frac{1}{2}$ inches long.

Two men went back to the camp, for one had a frost-bitten foot. This left Priestley and Gran, who tried to boil the hypsometer but failed owing to the wind, which was variable and enveloped them from time to time in steam and sulphur vapour. They left a record on a cairn and started to return. But when they had got 500 feet down Priestley found that he had left a tin of exposed films on the top

instead of the record. Gran said he would go back and change it. He had reached the top when there was a loud explosion: large blocks of pumice were hurled out with a big smoke cloud; probably a big bubble had burst. Gran was in the middle of it, heard it gurgle before it burst, saw "blocks of pumiceous lava, in shape like the halves of volcanic bombs, and with bunches of long, drawn-out, hair-like shreds of glass in their interior."[1] This was Pélé's hair. Gran was a bit sick from sulphur dioxide fumes afterwards. They reached Cape Royds on the 16th, the very successful trip taking fifteen days.

Meanwhile Shackleton's old hut was very pleasant at this time of year: in winter it was a bit too draughty. With bright sunlight, a lop on the sea which splashed and gurgled under the ice-foot, the beautiful mountains all round us, and the penguins nesting at our door, this was better than the Beardmore Glacier, where we had expected to be at this date. What then must it have been to the six men who were just returned from the very Gate of Hell? And the food: "Truly Shackleton's men must have fed like turkey-cocks from all the delicacies here: boiled chicken, kidneys, mushrooms, ginger, Garibaldi biscuits, soups of all kinds: it is a splendid change. Best of all are the fresh-buttered skua's eggs which we make for breakfast. In fact, life is bearable with all that has been unknown so long at last cleared up, and our anxieties for Campbell's party laid at rest."[2]

For three weeks I worked among the Adélie penguins at Cape Royds, and obtained a complete series of their embryos. It was always Wilson's idea that embryology was the next job of a vertebral zoologist down south. I have already explained that the penguin is an interesting link in the evolutionary chain, and the object of getting this embryo is to find out where the penguins come in.[3] Whether or no they are more primitive than other non-flying birds, such as the apteryx, the ostrich, the rhea and the moa, which last is only just extinct, is an open question. But wingless birds are still hanging on to the promontories of the southern continents, where there is less rivalry than

[1] *Scott's Last Expedition*, vol. ii. p. 356. [2] My own diary. [3] See p. 234.

in the highly populated land areas of the north. It may be that penguins are descended from ancestors who lived in the northern hemisphere in a winged condition (even now you may sometimes see them try to fly), and that they have been driven towards the south.

If penguins are primitive, it is rational to infer that the most primitive penguin is farthest south. These are the two Antarcticists, the Emperor and the Adélie. The latter appears to be the more numerous and successful of the two, and for this reason we are inclined to search among the Emperors as being among the most primitive penguins, if not the most primitive of birds now living: hence the Winter Journey. I was glad to get, in addition, this series of Adélie penguins' embryos, feeling somewhat like a giant who had wandered on to the wrong planet, and who was distinctly in the way of its true inhabitants.

We returned too late to see the eggs laid, and therefore it was impossible to tell how old the embryos were. My hopes rose, however, when I saw some eggless nests with penguins sitting upon them, but later I found that these were used as bachelor quarters by birds whose wives were sitting near. I tried taking eggs from nests and was delighted to find that new eggs appeared: these I carefully marked, and it was not until I opened one two days later to find inside an embryo at least two weeks old, that I realized that penguins added baby-snatching to their other immoralities. Some of those from whom I took eggs sat upon stones of a similar size and shape with every appearance of content: one sat upon the half of the red tin of a Dutch cheese. They are not very intelligent.

All the world loves a penguin: I think it is because in many respects they are like ourselves, and in some respects what we should like to be. Had we but half their physical courage none could stand against us. Had we a hundredth part of their maternal instinct we should have to kill our children by the thousand. Their little bodies are so full of curiosity that they have no room for fear. They like mountaineering, and joy-riding on ice-floes: they even like to drill.

One day there had been a blizzard, and lying open to the view of all was a deserted nest, a pile of coveted stones. All the surrounding rookery made their way to and fro, each husband acquiring merit, for, after each journey, he gave his wife a stone. This was the plebeian way of doing things; but my friend who stood, ever so unconcerned, upon a rock knew a trick worth two of that: he and his wife who sat so cosily upon the other side.

The victim was a third penguin. He was without a mate, but this was an opportunity to get one. With all the speed his little legs could compass he ran to and fro, taking stones from the deserted nest, laying them beneath a rock, and hurrying back for more. On that same rock was my friend. When the victim came up with his stone he had his back turned. But as soon as the stone was laid and the other gone for more, he jumped down, seized it with his beak, ran round, gave it to his wife and was back on the rock (with his back turned) before you could say Killer Whale. Every now and then he looked over his shoulder, to see where the next stone might be.

I watched this for twenty minutes. All that time, and I do not know for how long before, that wretched bird was bringing stone after stone. And there were no stones there. Once he looked puzzled, looked up and swore at the back of my friend on his rock, but immediately he came back, and he never seemed to think he had better stop. It was getting cold and I went away: he was coming for another.

The life of an Adélie penguin is one of the most unchristian and successful in the world. The penguin which went in for being a true believer would never stand the ghost of a chance. Watch them go to bathe. Some fifty or sixty agitated birds are gathered upon the ice-foot, peering over the edge, telling one another how nice it will be, and what a good dinner they are going to have. But this is all swank: they are really worried by a horrid suspicion that a sea-leopard is waiting to eat the first to dive. The really noble bird, according to our theories, would say, "I will go first and if I am killed I shall at any rate have died unselfishly, sacrificing my life for my com-

panions"; and in time all the most noble birds would be dead. What they really do is to try and persuade a companion of weaker mind to plunge: failing this, they hastily pass a conscription act and push him over. And then—bang, helter-skelter, in go all the rest.

They take turns in sitting on their eggs, and after many days the fathers may be seen waddling down towards the sea with their shirt-fronts muddied, their long trick done. It may be a fortnight before they return, well-fed, clean, pleased with life, and with a grim determination to relieve their wives, to do their job. Sometimes they are met by others going to bathe. They stop and pass the time of day. Well! Perhaps it would be more pleasant, and what does a day or two matter anyhow. They turn; clean and dirty alike are off to the seaside again. This is when they say, "The women are splendid."

Life is too strenuous for them to have any use for the virtues of brotherly love, good works, charity and benevolence. When they mate the best thief wins: when they nest the best pair of thieves hatch out their eggs. In a long unbroken stream, which stretches down below the sea-ice horizon, they march in from the open sea. Some are walking on their human feet: others tobogganing upon their shiny white breasts. After their long walk they must have a sleep, and then the gentlemen make their way into the already crowded rookery to find them wives. But first a suitor must find, or steal, a pebble, for such are the penguin jewels: they are of lava, black, russet or grey, with almond-shaped crystals bedded in them. They are rare and of all sizes, but that which is most valued is the size of a pigeon's egg. Armed with one of these he courts his maid, laying it at her feet. If accepted he steals still more stones: she guards them jealously, taking in the meantime any safe opportunity to pick others from under her nearest neighbours. Any penguin which is unable to fight and steal successfully fails to make a good high nest, or loses it when made. Then comes a blizzard, and after that a thaw: for it thaws sometimes right down by the sea-shore where the Adélies have their nurseries. The eggs of the strong and

wicked hatch out, but those of the weak are addled. You must have a jolly good pile of stones to hatch eggs after a blizzard like that in December 1911, when the rookeries were completely snow-covered: nests, eggs, parents and all.

Once hatched the chicks grow quickly from pretty grey atoms of down to black lumps of stomach topped by a small and quite inadequate head. They are two or more weeks old, and they leave their parents, or their parents leave them, I do not know which. If socialism be the nationalization of the means of production and distribution, then they are socialists. They divide into parents and children. The adult community comes up from the open sea, bringing food inside them: they are full of half-digested shrimps. But not for their own children: these, if not already dead, are lost in a crowd of hungry tottering infants which besiege each food-provider as he arrives. But not all of them can get food, though all of them are hungry. Some have already been behindhand too long: they have not managed to secure food for days, and they are weak and cold and very weary.

"As we stood there and watched this race for food we were gradually possessed with the idea that the chicks looked upon each adult coming up full-bellied from the shore as not a parent only, but a food-supply. The parents were labouring under a totally different idea, and intended either to find their own infants and feed them, or else to assimilate their already partially digested catch themselves. The more robust of the young thus worried an adult until, because of his importunity, he was fed. But with the less robust a much more pathetic ending was the rule. A chick that had fallen behind in this literal race for life, starving and weak, and getting daily weaker because it could not run fast enough to insist on being fed, again and again ran off pursuing with the rest. Again and again it stumbled and fell, persistently whining out its hunger in a shrill and melancholy pipe, till at last the race was given up. Forced thus by sheer exhaustion to stop and rest, it had no chance of getting food. Each hurrying parent with its little following of hungry chicks, intent on one thing only, rushed

quickly by, and the starveling dropped behind to gather strength for one more effort. Again it fails, a robuster bird has forced the pace, and again success is wanting to the runt. Sleepily it stands there, with half-shut eyes, in a torpor resulting from exhaustion, cold, and hunger, wondering perhaps what all the bustle round it means, a little dirty, dishevelled dot, in the race for life a failure, deserted by its parents, who have hunted vainly for their own offspring round the nest in which they hatched it, but from which it may by now have wandered half a mile. And so it stands, lost to everything around, till a skua in its beat drops down beside it, and with a few strong, vicious pecks puts an end to the failing life." [1]

There is a great deal to be said for this kind of treatment. The Adélie penguin has a hard life: the Emperor penguin a horrible one. Why not kill off the unfit right away, before they have had time to breed, almost before they have had time to eat? Life is a stern business in any case: why pretend that it is anything else? Or that any but the best can survive at all? And in consequence, I challenge you to find a more jolly, happy, healthy lot of old gentlemen in the world. We *must* admire them: if only because they are so much nicer than ourselves! But it is grim: Nature is an uncompromising nurse.

Nature was going to give us a bad time too if we were not relieved, and on January 17, as there were still no signs of the ship, it was decided to prepare for another winter. We were to go on rations; to cook with oil, for nearly all the coal was gone; to kill and store up seal. On January 18 we started our preparations, digging a cave to store more meat, and so forth. I went off seal hunting after breakfast, and having killed and cut up two, came back across the Cape at mid-day. All the men were out working in the camp. There was nothing to be seen in the Sound, and then, quite suddenly, the bows of the ship came out from behind the end of the Barne Glacier, two or three miles away. We watched her cautious approach with immense relief.

[1] Wilson, *Nat. Ant. Exp., 1901–1904*, "Zoology," Part ii. pp. 44-45.

"Are you all well," through a megaphone from the bridge.

"The Polar Party died on their return from the Pole: we have their records." A pause and then a boat.

Evans, who had been to England and made a good recovery from scurvy, was in command: with him were Pennell, Rennick, Bruce, Lillie and Drake. They reported having had a very big gale indeed on their way home last year.

We got some apples off the ship, "beauties, I want nothing better. . . . Pennell is first-class, as always. . . ." "One notices among the ship's men a rather unnatural way of talking: not so much in special instances, but as a whole, contact with civilization gives it an affected sound: I notice it in both officers and men."[1]

"*January* 19. *On board the Terra Nova.* After 28 hours' loading we left the old hut for good and all at 4 P.M. this afternoon. It has been a bit of a rush and little sleep last night. It is quite wonderful now to be travelling a day's journey in an hour: we went to Cape Royds in about that time and took off geological and zoological specimens. I should like to sit up and sketch all these views, which would have meant long travelling without the ship, but I feel very tired. The mail is almost too good for words. Now, with the latest waltz on the gramophone, beer for dinner and apples and fresh vegetables to eat, life is more bearable than it has been for many a long weary week and month. I leave Cape Evans with no regret: I never want to see the place again. The pleasant memories are all swallowed up in the bad ones."[2]

Before the ship arrived it was decided among us to urge the erection of a cross on Observation Hill to the memory of the Polar Party. On the arrival of the ship the carpenter immediately set to work to make a great cross of jarrah wood. There was some discussion as to the inscription, it being urged that there should be some quotation from the Bible because "the women think a lot of these things." But I was glad to see the concluding line of Tennyson's

[1] My own diary. [2] *Ibid.*

"Ulysses" adopted: "To strive, to seek, to find, and not to yield."

The open water stretched about a mile and a half south of Tent Island, and here we left the ship to sledge the cross to Hut Point at 8 A.M. on January 20. The party consisted of Atkinson, Wright, Lashly, Crean, Debenham, Keohane and Davies, the ship's carpenter and myself.

"*Evening. Hut Point.* We had a most unpleasant experience coming in. We struck wind and drift just about a mile from Hut Point: then we saw there was a small thaw pool off the Point, and came out to give it a wide berth. Atkinson put his feet down into water: we turned sharp out, and then Crean went right in up to his arms, and we realized that the ice was not more than three or four inches of slush. I managed to give him a hand out without the ice giving, and we went on floundering about. Then Crean went right in again, and the sledge nearly went too: we pulled the sledge, and the sledge pulled him out. Except for some more soft patches that was all, but it was quite enough. I think we got out of it most fortunately."

"Crean got some dry clothes here, and the cross has had a coat of white paint and is drying. We went up Observation Hill and have found a good spot right on the top, and have already dug a hole which will, with the rock alongside, give us three feet. From there we can see that this year's old ice is in a terrible state, open water and open water slush all over near the land—I have never seen anything like it here. Off Cape Armitage and at the Pram Point pressure it is extra bad. I only hope we can find a safe way back."

"You would not think Crean had had such a pair of duckings to hear him talking so merrily to-night. . . ."

"I really do think the cross is going to look fine."[1]

Observation Hill was clearly the place for it, it knew them all so well. Three of them were Discovery men who lived three years under its shadow: they had seen it time after time as they came back from hard journeys on the Barrier: Observation Hill and Castle Rock were the two

[1] My own diary.

which always welcomed them in. It commanded McMurdo Sound on one side, where they had lived: and the Barrier on the other, where they had died. No more fitting pedestal, a pedestal which in itself is nearly 1000 feet high, could have been found.

"*Tuesday, January* 22. Rousing out at 6 A.M. we got the large piece of the cross up Observation Hill by 11 A.M. It was a heavy job, and the ice was looking very bad all round, and I for one was glad when we had got it up by 5 o'clock or so. It is really magnificent, and will be a permanent memorial which could be seen from the ship nine miles off with a naked eye. It stands nine feet out of the rocks, and many feet into the ground, and I do not believe it will ever move. When it was up, facing out over the Barrier, we gave three cheers and one more."

We got back to the ship all right and coasted up the Western Mountains to Granite Harbour; a wonderfully interesting trip to those of us who had only seen these mountains from a distance. Gran went off to pick up a depôt of geological specimens. Lillie did a trawl.

This was an absorbing business, though it was only one of a long and important series made during the voyages of the Terra Nova. Here were all kinds of sponges, siliceous, glass rope, tubular, and they were generally covered with mucus. Some fed on diatoms so minute that they can only be collected by centrifuge: some have gastric juices to dissolve the siliceous skeletons of the diatoms on which they feed: they anchor themselves in the mud and pass water in and out of their bodies: sometimes the current is stimulated by cilia. There were colonies of Gorgonacea, which share their food unselfishly; and corals and marine degenerate worms, which started to live in little cells like coral, but have gone down in the world. And there were starfishes, sea-urchins, brittle-stars, feather-stars and sea-cucumbers. The sea-urchins are formed of hexagonal plates, the centre of each of which is a ball, upon which a spine works on a ball and socket joint. These spines are used for protection, and when large they can be used for locomotion. But the real means of locomotion are five double rows of water-tube

feet, working by suction, by which they withdraw the water inside a receptacle in the shell, thereby forming a vacuum; starfishes do the same. We found a species of sea-urchin which had such large spines that they practically formed bars; the spines were twice as long as the sea-urchin and shaped just like oars, being even fluted. A lobster grows by discarding his suit, hiding and getting another, growing meanwhile. A snail or an oyster retains his original shell, and adds to it in layers all the way down, increasing one edge. But our sea-urchin grows by an increment of calcareous matter all round the outside of each plate. As the animal grows the plates get bigger.

There was a sea-cucumber which nurses its young, having a brood cavity which is really formed out of the mouth: this is a peculiarity of a new Antarctic genus found first on the Discovery. It has the most complex water-tubes, which it uses as legs, and a few limy rods in its soft skin instead of the bony calcareous plates of sea-urchins and starfish. After them came the feather-stars, a relic of the old crinoids which used to flourish in the carboniferous period, examples of which can be found in the Derbyshire limestone; and there were thousands of brittle-stars, like beautiful wheels of which the hubs and spokes remained, but not the circumference. These spokes or legs are muscular, sensory and locomotive; they differ from the starfishes in that they have no digestive glands in their legs, and from the feather-stars in that they do not use their legs to waft food into their mouths. Once upon a time they had a stalk and were anchored to a rock, and there are still very rare old stalked echinoderms living in the sea. This apparently geological thing was found by Wyville Thomson in 1868 still living in the seas to the north of Scotland, and this find started the Challenger Expedition for deep-sea soundings in 1872. But the Challenger brought back little in this line. Most of the species we found were peculiar to the Antarctic.

There were Polychaete worms by the hundred, showing the protrusable mouth, which is shoved into the mud and then brought back into the body, and the bristles on

the highly developed projections which act as legs, by which they get about the mud. These beasts have apparently given rise to the Arthropods. In a modified and later form they had taken to living in a tube, both for protection and because they found that they could not go through the mud, which had become too viscous for them. So they stand up in a tube and collect the sediment which is falling by means of tentacles. They spread from one locality to another by going through a plankton embryonic stage in their youth. They may be compared to the mason worms, which also build tubes.

But as Lillie squatted on the poop surrounded by an inner ring of jars and tangled masses of the catch, and an outer ring of curious scientists, pseudo-scientists and seamen, no find pleased him so much as the frequent discovery of pieces of Cephalodiscus rarus, of which even now there are but some four jars full in the world. It is as interesting as it is uncommon, for its ancestor was a link between the vertebrates and invertebrates, though no one knows what it was like. It has been a vertebrate and gone back, and now has the signs of a notochord in early life, and it also has gills. First found on the Graham's Land side of the Antarctic continent, it has only recently been discovered in the Ross Sea, and occurs nowhere else in the world so far as is known.

We left Granite Harbour in the early morning of January 23, and started to make our way out. Our next job was to pick up the geological specimens at Evans Coves, where Campbell and his men had wintered in the igloo, and also to leave a depôt there for future explorers. We met very heavy pack, having to return at least twelve miles and try another way. " The sea has been freezing out here, which seems an extraordinary thing at this time of year. There was a thin layer of ice over the water between the floes this morning, and I feel sure that most of these big level floes, of which we have seen several, are the remains of ice which has frozen comparatively recently." [1] The propeller had a bad time, constantly catching up on

[1] My own diary.

ice. At length we were some thirty miles north of Cape Bird making roughly towards Franklin Island. That night we made good progress in fairly open water, and we passed Franklin Island during the day. But the outlook was so bad in the evening (January 24) that we stopped and banked fires. "We lay just where we stopped until at 5 A.M. on January 25, when the ice eased up sufficiently for us to get along, and we started to make the same slow progress—slow ahead, stop (to the engine-room)—bump and grind for a bit—then slow astern, stop—slow ahead again, and so on, until at 7 P.M., after one real big bump which brought the dinner some inches off the table, Cheetham brought us out into open water."[1]

Mount Nansen rose sheer and massive ahead of us with a table top, and at 3 A.M. on January 26 we were passing the dark brown granite headland of the northern foothills. We were soon made fast to a stretch of some 500 yards of thick sea-ice, upon which the wind had not left a particle of snow, and before us the foothills formed that opening which Campbell had well named Hell's Gate.

I wish I had seen that igloo: with its black and blubber and beastliness. Those who saw it came back with faces of amazement and admiration. We left a depôt at the head of the bay, marked with a bamboo and a flag, and then we turned homewards, counting the weeks, and days, and then the hours. In the early hours of January 27 we left the pack. On January 29 we were off Cape Adare, "head sea, and wind, and fog, very ticklish work groping along hardly seeing the ship's length. Then it lifts and there is a fair horizon. Everybody pretty sea-sick, including most of the seamen from Cape Evans. All of us feeling rotten."[2] Very thick that night, and difficult going. At mid-day (lat. 69° 50′ S.) a partial clearance showed a berg right ahead. By night it was blowing a full gale, and it was not too easy to keep in our bunks. Our object was now to make east in order to allow for the westerlies later on. We passed a very large number of bergs, varied every now and then by growlers. On February 1, latitude 64° 15′ S. and

[1] My own diary. [2] *Ibid.*

longitude 159° 15′ E., we coasted along one side of a berg which was twenty-one geographical miles long: the only other side of which we got a good view stretched away until lost below the horizon. In latitude 62° 10′ S. and longitude 158° 15′ E. we had "a real bad day: head wind from early morning, and simply crowds of bergs all round. At 8 A.M. we had to wedge in between a berg and a long line of pack before we could find a way through. Then thick fog came down. At 9.45 A.M. I went out of the ward-room door, and almost knocked my head against a great berg which was just not touching the ship on the starboard side. There was a heavy cross-swell, and the sea sounded cold as it dashed against the ice. After crossing the deck it was just possible to see in the fog that there was a great Barrier berg just away on the port side." We groped round the starboard berg to find others beyond. Our friend on the opposite side was continuous and apparently without end. It was soon clear that we were in a narrow alley-way—between one very large berg and a number of others. It took an hour and a quarter of groping to leave the big berg behind. At 4 P.M., six hours later, we were still just feeling our way along. And we had hopes of being out of the ice in this latitude!

The Terra Nova is a wood barque, built in 1884 by A. Stephen & Sons, Dundee; tonnage 764 gross and 400 net; measuring 187′ × 31′ × 19′; compound engines with two cylinders of 140 nominal horse-power; registered at St. Johns, Newfoundland. She is therefore not by any means small as polar ships go, but Pennell and his men worked her short-handed, with bergs and growlers all round them, generally with a big sea running and often in darkness or fog. On this occasion we were spared many of the most ordinary dangers. It was summer. Our voyage was an easy one. There was twilight most of the night: there were plenty of men on board, and heaps of coal. Imagine then what kind of time Pennell and his ship's company had in late autumn, after remaining in the south until only a bare ration of coal was left for steaming, until the sea was freezing round them and the propeller brought up dead as they tried

to force their way through it. Pennell was a very sober person in his statements, yet he described the gale through which the Terra Nova passed on her way to New Zealand in March 1912 as seeming to blow the ship from the top of one wave to the top of the next; and the nights were dark, and the bergs were all round them. They never tried to lay a meal in those days, they just ate what they could hold in their hands. He confessed to me that one hour he did begin to wonder what was going to happen next: others told me that he seemed to enjoy every minute of it all.

Owing to press contracts and the necessity of preventing leakage of news the Terra Nova had to remain at sea for twenty-four hours after a cable had been sent to England. Also it was of the first importance that the relatives should be informed of the facts before the newspapers published them.

And so at 2.30 A.M. on February 10 we crept like a phantom ship into the little harbour of Oamaru on the east coast of New Zealand. With what mixed feelings we smelt the old familiar woods and grassy slopes, and saw the shadowy outlines of human homes. With untiring persistence the little lighthouse blinked out the message, "What ship's that?" "What ship's that?" They were obviously puzzled and disturbed at getting no answer. A boat was lowered and Pennell and Atkinson were rowed ashore and landed. The seamen had strict orders to answer no questions. After a little the boat returned, and Crean announced: "We was chased, sorr, but they got nothing out of us."

We put out to sea.

When morning broke we could see the land in the distance—greenness, trees, every now and then a cottage. We began to feel impatient. We unpacked the shore-going clothes with their creases three years old which had been sent out from home, tried them on—and they felt unpleasantly tight. We put on our boots, and they were positively agony. We shaved off our beards! There was a hiatus. There was nothing to do but sail up and down the coast and, if possible, avoid coastwise craft.

In the evening the little ship which runs daily from

Akaroa to Lyttelton put out to sea on her way and ranged close alongside. "Are all well?" "Where's Captain Scott?" "Did you reach the Pole?" Rather unsatisfactory answers and away they went. Our first glimpse, however, of civilized life.

At dawn the next morning, with white ensign at half-mast, we crept through Lyttelton Heads. Always we looked for trees, people and houses. How different it was from the day we left and yet how much the same: as though we had dreamed some horrible nightmare and could scarcely believe we were not dreaming still.

The Harbour-master came out in the tug and with him Atkinson and Pennell. "Come down here a minute," said Atkinson to me, and "It's made a tremendous impression, I had no idea it would make so much," he said. And indeed we had been too long away, and the whole thing was so personal to us, and our perceptions had been blunted: we never realized. We landed to find the Empire—almost the civilized world—in mourning. It was as though they had lost great friends.

To a sensitive pre-war world the knowledge of these men's deaths came as a great shock: and now, although the world has almost lost the sense of tragedy, it appeals to their pity and their pride. The disaster may well be the first thing which Scott's name recalls to your mind (as though an event occurred in the life of Columbus which caused you to forget that he discovered America); but Scott's reputation is not founded upon the conquest of the South Pole. He came to a new continent, found out how to travel there, and gave knowledge of it to the world: he discovered the Antarctic, and founded a school. He is the last of the great geographical explorers: it is useless to try and light a fire when everything has been burned; and he is probably the last old-fashioned polar explorer, for, as I believe, the future of such exploration is in the air, but not yet. And he was strong: we never realized until we found him lying there dead how strong, mentally and physically, that man was.

In both his polar expeditions he was helped, to an

extent which will never be appreciated, by Wilson : in the last expedition by Bowers. I believe that there has never been a finer sledge party than these three men, who combined in themselves initiative, endurance and high ideals to an extraordinary degree. And they could organize : they did organize the Polar Journey and their organization seemed to have failed. Did it fail? Scott said No. "The causes of this disaster are not due to faulty organization, but to misfortune in all risks which had to be undertaken." Nine times out of ten, says the meteorologist, he would have come through : but he struck the tenth. "We took risks, we knew we took them ; things have come out against us, and therefore we have no cause for complaint." No better epitaph has been written.

He decided to use the only route towards the Pole of which the world had any knowledge, that is to go up the Beardmore Glacier, then the only discovered way up through the mountains which divide the polar plateau from the Great Ice Barrier : probably it is the only possible passage for those who travel from McMurdo Sound. The alternative was to winter on the Barrier, as Amundsen did, so many hundred miles away from the coast-line that, in travelling south, the chaos caused in the ice plain by the Beardmore in its outward flow would be avoided. To do so meant the abandonment of a great part of the scientific programme, and Scott was not a man to go south just to reach the Pole. Amundsen knew that Scott was going to McMurdo Sound when he decided to winter in the Bay of Whales : otherwise he might have gone to McMurdo Sound. Probably no man would have refused the knowledge which had already been gained.

I have said that there are those who say that Scott should have relied on ski and dogs. If you read Shackleton's account of his discovery and passage of the Beardmore Glacier you will not be prejudiced in favour of dogs : and as a matter of fact, though we found a much better way up than Shackleton, I do not believe it possible to take dogs up and down, and over the ice disturbances at the junction with the plateau, unless there is ample time to

survey a route, if then. "Dogs could certainly have come up as far as this," I heard Scott say somewhere under the Cloudmaker, approximately half-way up the glacier, but the best thing you could do with dogs in pressure such as we all experienced on our way down would be to drop them into the nearest chasm. If you can avoid such messes well and good: if not, you must not rely on dogs, and the people who talk of these things have no knowledge.

If Scott was going up the Beardmore he was probably right not to take dogs: actually he relied on ponies to the foot of the glacier and man-haulage on from that point. Because he relied on ponies he was not able to start before November: the experience of the Depôt Journey showed that ponies could not stand the weather conditions before that date. But he could have started earlier if he had taken dogs, in place of ponies, to the foot of the glacier. This would have gained him a few days in his race against the autumn conditions when returning.

Such tragedies inevitably raise the question, "Is it worth it?" What is worth what? Is life worth risking for a feat, or losing for your country? To face a thing because it was a feat, and only a feat, was not very attractive to Scott: it had to contain an additional object—knowledge. A feat had even less attraction for Wilson, and it is a most noteworthy thing in the diaries which are contained in this book, that he made no comment when he found that the Norwegians were first at the Pole: it is as though he felt that it did not really matter, as indeed it probably did not.

It is most desirable that some one should tackle these and kindred questions about polar life. There is a wealth of matter in polar psychology: there are unique factors here, especially the complete isolation, and four months' darkness every year. Even in Mesopotamia a long-suffering nation insisted at last that adequate arrangements must be made to nurse and evacuate the sick and wounded. But at the Poles a man must make up his mind that he may be rotting of scurvy (as Evans was) or living for ten months on half-rations of seal and full rations of ptomaine poison-

ing (as Campbell and his men were) but no help can reach him from the outside world for a year, if then. There is no chance of a 'cushy' wound: if you break your leg on the Beardmore you must consider the most expedient way of committing suicide, both for your own sake and that of your companions.

Both sexually and socially the polar explorer must make up his mind to be starved. To what extent can hard work, or what may be called dramatic imagination, provide a substitute? Compare our thoughts on the march; our food dreams at night; the primitive way in which the loss of a crumb of biscuit may give a lasting sense of grievance. Night after night I bought big buns and chocolate at a stall on the island platform at Hatfield station, but always woke before I got a mouthful to my lips; some companions who were not so highly strung were more fortunate, and ate their phantom meals.

And the darkness, accompanied it may be almost continually by howling blizzards which prevent you seeing your hand before your face. Life in such surroundings is both mentally and physically cramped; open-air exercise is restricted and in blizzards quite impossible, and you realize how much you lose by your inability to see the world about you when you are out-of-doors. I am told that when confronted by a lunatic or one who under the influence of some great grief or shock contemplates suicide, you should take that man out-of-doors and walk him about: Nature will do the rest. To normal people like ourselves living under abnormal circumstances Nature could do much to lift our thoughts out of the rut of everyday affairs, but she loses much of her healing power when she cannot be seen, but only felt, and when that feeling is intensely uncomfortable.

Somehow in judging polar life you must discount compulsory endurance; and find out what a man can shirk, remembering always that it is a sledging life which is the hardest test. It is because it is so much easier to shirk in civilization that it is difficult to get a standard of what your average man can do. It does not really matter much

whether your man whose work lies in or round the hut shirks a bit or not, just as it does not matter much in civilization : it is just rather a waste of opportunity. But there's precious little shirking in Barrier sledging : a week finds most of us out.

There are many questions which ought to be studied. The effect upon men of going from heat to cold, such as Bowers coming to us from the Persian Gulf : or vice versa of Simpson returning from the Antarctic to India ; differences of dry and damp cold ; what is a comfortable temperature in the Antarctic and what is it compared to a comfortable temperature in England, the question of women in these temperatures . . . ? The man with the nerves goes farthest. What is the ratio between nervous and physical energy ? What is vitality ? Why do some things terrify you at one time and not at others ? What is this early morning courage ? What is the influence of imagination ? How far can a man draw on his capital ? Whence came Bowers' great heat supply ? And my own white beard ? and X's blue eyes : for he started from England with brown ones and his mother refused to own him when he came back ? Growth and colour change in hair and skin ?

There are many reasons which send men to the Poles, and the Intellectual Force uses them all. But the desire for knowledge for its own sake is the one which really counts and there is no field for the collection of knowledge which at the present time can be compared to the Antarctic.

Exploration is the physical expression of the Intellectual Passion.

And I tell you, if you have the desire for knowledge and the power to give it physical expression, go out and explore. If you are a brave man you will do nothing : if you are fearful you may do much, for none but cowards have need to prove their bravery. Some will tell you that you are mad, and nearly all will say, "What is the use ?" For we are a nation of shopkeepers, and no shopkeeper will look at research which does not promise him a financial

return within a year. And so you will sledge nearly alone, but those with whom you sledge will not be shopkeepers: that is worth a good deal. If you march your Winter Journeys you will have your reward, so long as all you want is a penguin's egg.

GLOSSARY

Blizzard. An Antarctic blizzard is a high southerly wind generally accompanied by clouds of drifting snow, partly falling from above, partly picked up from the surface. In the daylight of summer a tent cannot be seen a few yards off: in the darkness of winter it is easy to be lost within a few feet of a hut. There is no doubt that a blizzard has a bewildering and numbing effect upon the brain of any one exposed to it.

Brash. Small ice fragments from a floe which is breaking up.

Cloud. The commonest form of cloud, and also that typical of blizzard conditions, was a uniform pall stretching all over the sky without distinction. This was logged by us as *stratus*. *Cumulus* clouds are the woolly billows, flat below and rounded on top, which are formed by local ascending currents of air. They were rare in the south and only formed over open water or mountains. *Cirrus* are the " mare's tails " and similar wispy clouds which float high in the atmosphere. These and their allied forms were common. Generally speaking, the clouds were due to stratification of the air into layers rather than to ascending currents.

Crusts. Layers of snow in a snow-field with air space between them.

Finnesko. Boots made entirely of fur, soles and all.

Frost Smoke. Condensed water vapour which forms a mist over open sea in cold weather.

Ice-foot. Fringes of ice which skirt many parts of the Antarctic shores: many of them have been formed by sea-spray.

Nunatak. An island of land in a snow-field. Buckley Island is the top of a mountain sticking out of the top of the Beardmore Glacier.

Piedmont. Strètches of ancient ice which remain along the Antarctic coasts.

Pram. A Norwegian skiff, with a spoon bow.

Saennegrass. A kind of Norwegian hay used as packing in finnesko.

Sastrugi are the furrows or irregularities formed on a snow plain by the wind. They may be a foot or more deep and as hard and as slippery

as ice : they may be quite soft : they may appear as great inverted pudding bowls : they may be hard knots covered with soft powdery snow.

Sledging Distances. All miles are geographical miles unless otherwise stated. 1 statute or English mile = 0·87 geographical mile : 1 geographical mile = 1·15 statute miles.

Tank. A canvas " hold-all " strapped to the sledge to contain food bags.

Tide Crack. A working crack between the land ice and the sea ice which rises and falls with the tide.

Wind. Wind forces are logged according to the Beaufort scale, which is as follows :

No.	Description.	Mean velocity in miles per hour.
0.	Calm	0
1.	Light air	1
2.	Light breeze	4
3.	Gentle breeze	9
4.	Moderate breeze	14
5.	Fresh breeze	20
6.	Strong breeze	26
7.	Moderate gale	33
8.	Fresh gale	42
9.	Strong gale	51
10.	Whole gale	62
11.	Storm	75
12.	Hurricane	92

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